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PSYCHOLOGY AND PHILOSOPHY.

I.—THE DEFINITION OF WILL.

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No. I.

THE object of this article, and of two which follow it, is to explain and defend a definition of will, a definition which has been already laid down by me on various occasions.[1] The only proper explanation and defence of it would be a psychological treatment of the whole practical side of mind. I must content myself here with endeavouring in an unsystematic manner to advocate a view which, the more I see it criticised, strikes me more as the one view which is tenable. But the will of which I speak, is the will which is known and experienced as such. It is not something in a world beyond and behind the contents of our experience, something to be reached only by an inference valid or vicious. In other words we are to remain here within the limits of empirical psychology.[2]

A volition is 'the self-realisation of an idea with which the self is identified,' and in psychology there is in the end no will except in the sense of volition. We may speak of a permanent or standing will for a certain end, and may talk as if it existed there where at the moment no actual volition

[1] MIND, N.S., Nos. 41 and 43. *Cf.* No. 40 and O.S., No. 49.

[2] *Cf.* MIND, N.S., No. 33. The above statement does not mean that a volition may not be continued beyond the limits of what we experience. See below.

is present. In the same way we are said to have a permanent belief, or again a permanent attention, where for the moment we are not supposed to be actually attending.[1] But though a 'standing will' may be used with a legitimate meaning, there is in the proper sense no actual will except in volitions. Will therefore is action outward or internal, but on the other hand not every action is really will. You cannot even say that an action must be will in all cases where in some sense I impute it, or should impute it, to myself. But, wherever an action has the character laid down in our definition, I should impute to myself that act as a volition. Language and experience bear, I believe, an overwhelming testimony to this result, while upon the other side, apart from lax expressions which do not claim to be more than lax, I am unable to find more than misunderstanding and error. If in these articles I can remove some more or less serious mistakes, the doctrine which I advocate will, I hope, recommend itself to the reader.

A volition, I have said, is the self-realisation of an idea with which the self is identified, and a volition is a whole in which we may go on to find the following aspects. There is (1) existence, (2) the idea of a change,[2] and (3) the actual change of the existence by the idea to (4) the idea's content. And (5) in this change the self feels itself realised. The self is altered to something which before the change it actually was not, something which it felt to be its own proper being and existence. Up to what point however the actual realisation of self must be felt, and again how far the self, beside thus feeling, must also perceive itself and so be self-conscious of itself as an object, are questions which will have to be discussed in their own place.

It is difficult in a series of articles to make a beginning except from some assumption. I think it best at present to assume provisionally the existence of what is called 'ideo-motor action,' and to try to show that volition falls under this head. I shall therefore take for granted here the tendency of an idea to realise itself, and any question as to the existence and nature of this tendency must be deferred to another article. Let us then for the moment agree that ideo-motor action in general is a fact, and from this let us go

[1] MIND, N.S., No. 41, p. 26. The meaning of 'a standing will' is a point to be discussed in a later article.

[2] Or we may prefer to say 'the idea of something different to what exists'. The precise content of this idea is a difficult question which will have to be discussed at length hereafter.

on to consider in detail the aspects of volition which we have mentioned.

It may be convenient to take first the aspect of existence. This calls, I think, here for but little remark, and any metaphysical discussion of its difficulties would be out of place. It is, we may say, the aspect of reality as opposed to anything that is merely ideal. It is the temporal series of events, external or inward only, when that is taken as an actual series; or again it is that which is now present to me, together with any actual prolongation which is continuous with and one with my present. How far the future, as well as the past, can be regarded in any sense as existing, I am unable here to discuss. Existence may be spatial also, and, as spatial, it will begin from my 'here' and will contain whatever is continuous and one with that datum. But I cannot myself agree that existence must always be spatial, unless I may add that it need not always be spatial directly. And there is no occasion, I think, at present for any further remark. The sense in which existence comes as a not-self in opposition to a self, as well as a reality over against an idea, will be dealt with hereafter.

Existence then is that actual series of events which is either (*a*) now and here, or is (*b*) continuous with my here and now. In volition (we must next proceed to note) this existence must be altered, and, further, the alteration must start directly from the existing 'now'. The change must begin on and from this 'present,' and this present must be taken in its own character and unconditionally. But, while emphasising this point, we must remember not to push emphasis into error. Volition certainly must begin from and on the 'this now,' but volition as certainly is not confined within these limits. And it is wrong to deny that I can really will something to happen after an hour or after my death. I shall return to this error but at present need insist only on the truth that, wherever volition ends, it must begin at once by an alteration of my present existence.

The reader may remember that this doctrine has been denied. It has, for instance, been objected that will does not always aim at an alteration of the present, for its end, we are told, may be a mere continuance and so an absence of change. But a continuance of the present in a certain character is, I must urge, if really willed, a real will for alteration. The present is taken here as naturally and of itself about to pass into a different character, and hence, if I will that it remain the same, I must will it to change from itself. And if this conclusion at first sight seems

paradoxical, I think that on reflexion the paradox may vanish.[1]

In volition there must be an alteration of existence and of existence as such. The change, which comes in, must not merely be something which in some indirect way belongs to existence, and qualifies that so as to leave it, so far, unchanged as existing. On the contrary the change must directly qualify the existence itself in such a way that, even as existing, it suffers that change. The alteration in other words must not be merely ideal. This is a distinction which within my present limits I cannot fully discuss, but a failure to grasp it would leave the reader at the mercy of error. Let us suppose for instance that what I have willed is to think and know this or that, the result of my volition will here have two sides which we must not confuse. The object has been qualified ideally, and this, again, is an event which has happened in me. My existence has, as existence, been changed by my will, but the existence of the object itself, on the other hand, has not been altered at all. It has become qualified not in fact but, as we say, ideally; while the actual change which has taken place belongs, we say, only to me. It is impossible to ask here what is the ultimate truth with regard to this distinction, but the distinction itself must be observed in psychology. If by your volition you have, for instance, produced truth and knowledge in yourself, you may by a legitimate abstraction neglect the aspect of its appearance in you, and so take the truth merely as being such or such in itself. But if, while still maintaining this abstraction, you attributed the resulting truth to your will—you would have fallen into a very serious confusion and mistake. At least for psychology the will to know cannot alter the real object known, and it cannot, in other words, make truth. Your will to know alters your

[1] Lotze, *Med. Psych.*, p. 300, gives the instance of a martyr whose will is directed on actual pain. But the martyr's will, I reply, has for its object the maintenance of a certain attitude with regard to the pain. He wills that the pain shall not move him, and this means that it shall not take the course which it naturally would take of itself. His real end is therefore to alter existence, to change it so that it will follow a different course. The willed maintenance of an attitude, in short we may say, is a perpetual willed alteration of existence. We may notice here another doubt which perhaps may be raised. Will is not always for something to come, it may be said, for I can will, however unsuccessfully, to alter my past. But, I reply, the fact that the change, when made, would here lie behind me, is really irrelevant. From the point of view of the act itself the change is future, and the act starts from the present state of things and alters that. I shall consider later how far the fact of Resolve can be taken as an objection to the doctrine of the text.

actual existence, and with that there comes a changed appearance of the object in you, but the object itself is not thereby changed. The truth in brief has two aspects (I do not ask how they are connected), and it is only one of these aspects which can be produced by your will. The ideal qualification of the object has been a real change, but it has not, at least for psychology, altered the object as existing.[1]

From this I will go on to lay stress on another important point. Not only in volition must the existence be altered, but it must be altered to that character which was possessed by the idea. And not only must the existence suffer a change to this prescribed result, but the result must also be produced by the foregoing idea. The idea must itself alter the existence to its own nature, or in other words the idea must itself carry itself out into the changed existence. And, if all this does not happen, there is really no will, but at most a more or less explicable counterfeit and illusion. This point is so evident that I think it useless to enlarge further on it here, and will pass on to warn the reader against a dangerous misunderstanding. In insisting that the result in volition must come from the idea, I do not mean to assert that the idea must be the whole and the sole cause. This would be a doctrine which in my judgment could not possibly be sustained, and in short would involve a very serious mistake. I cannot here enter into the general subject of cause and effect, but for our present purpose I may perhaps express my meaning as follows. The idea is certainly not that whole complex cause which goes before and issues in the effect, but the idea is a positive and necessary element within that complex whole. It is not a mere accompaniment or a mere *sine qua non*, however inseparable or even necessary, but it enters directly into the causal sequence so as to make a difference by which the effect is produced. I think that this justifies us in maintaining that the alteration is due to the idea, and without so much as this I would submit that there can be no real will.[2]

[1] *Cf.* here MIND, N.S., No. 33, p. 6, and No. 41.

[2] A machine might be such that, say, its whistling might be the *sine qua non* of its work, since both in fact are effects from one and the same cause. If the machine took the whistling to be the cause of the work, that would be clearly an illusion, and if the idea in volition were a mere *sine qua non*, will would also be illusory. It may be urged on the other side that if the idea is but one element in the whole cause, we cannot say properly that the effect is produced by the idea. An objection of this kind, we must however not forget, has a very wide application. I think it perhaps enough to reply here that, where we consider that such

And for this reason a result, when it has only been expected, is not taken as willed. Expectation is not volition except to that extent to which it is a will for apprehension, and is a will so far for a change of my psychical existence. If I expect the arrival of a letter and the arrival in fact happens, my idea has certainly been realised, but the result is not attributed to my will. The cause of the letter's coming is not taken to lie in existence *plus* my idea, but in existence qualified by other and independent conditions. We may illustrate again by the case of a spasmodic movement which is expected but not willed. The whole question is in brief whether, and in what way, my idea contributes or does not contribute to the result.[1] We may illustrate this once more from the other side by a different example. If instead of the arrival of a letter we take the cessation of a pain, we may now be unable to decide as to the expected result having issued from my will. And the question here again will be whether and how far the idea itself contributed towards bringing about its own existence. I shall have in another article to enter more fully into the conditions of our perception of agency, and it is sufficient to insist at present on these two main points. On the one hand the existence must be changed so as to express the idea, and on the other hand this change must not come from the mere existence itself. If we do not take the alteration to be made by the idea, we are bound to deny the real presence of volition.[2]

an element has importance, and where we wish to insist that its presence really, as we say, 'makes the difference,' we may fairly speak of the change as being produced by it.

[1] If I have not misunderstood the doctrine advocated by Prof. Münsterberg in his *Willenshandlung*, he considers the mere precedence of the idea enough to produce the appearance of volition. Any such doctrine would however seem to be opposed to the plain facts mentioned in my text. Since writing the above remark, as well as the present and the two following articles, I have made the acquaintance of Prof. Münsterberg's interesting *Grundzüge der Psychologie*. The account of our volitional consciousness seems considerably amended there (pp. 354-5), but it remains, as I understand it, fatally defective. When a man expects to yawn, and then this happens, it surely does not by itself give him the consciousness of will. On the other hand it falls, so far as I see, within Prof. Münsterberg's definition. But the problem, I venture to think, has been made hopeless from the first by more than one unexplained, if not arbitrary, assumption, and I must regret that Prof. Münsterberg's great penetration and ingenuity have not been applied in larger measure to the work of making clear his principles.

[2] On Expectation *Cf.* MIND, No. 49, pp. 16, 30, and N.S., No. 41, p. 9. I do not admit that in all expectation there must be will or even desire, but, so far as there is will, it is a will only for the ideal development of the object in and for me, and any other will, if present, falls outside the

I have now to some extent explained the sense in which volition is described as the self-realisation of an idea, but I have so far said nothing on the meaning of the phrase 'identification with self'. I shall discuss this latter point hereafter at some length but for the present it must be deferred. There are difficulties which still attach themselves to the former part of our definition, and I must endeavour in this article to remove them and to correct some mistakes.

It may be objected first that will cannot be the alteration of existence by an idea, since there may be a volition where the idea does not really carry itself out. And as examples of this may be adduced such cases as resolve and intention, will in paralysis, and again the facts of disapprobation or approval. I will discuss these objections beginning with resolve; and in connexion with this point I must deal with a matter of importance, the difference between a complete and an incomplete act of will.

If intention and resolve by themselves were really volition, why should we hear of a *mere* resolve or of a *mere* intention? The question is obvious and, I will add, it points to an evident truth. A resolve in its essence is not a volition, and, so far as actually it is will, it is so but incidentally. The moral chasm between the two facts often cannot be ignored. It is plainly one thing to be resolved beforehand, and another thing to act when the moment has come. And, if resolve

expectation itself. It is instructive to take a case where I both will a result and also therefore expect the result to happen. We have here (*a*) the existence as it is now, and (*b*) the existence ideally qualified for me by the result, when taken by me as subject to the condition of my idea and a time-interval. And so far there is no opposition between my idea and existence, and no awareness of will. For the actual volition we must have also (*c*) an awareness of the opposition of my idea of the result to the existence as it is now, followed by the attribution (in some sense) of the actual change as an effect to the idea. We need not stop to notice also the further possible attribution of my better apprehension of the result, when it arrives, to another volition. What we should observe in the above case is that, for actual volition to take place, the consciousness of the time-interval must for the moment lapse, or at least pass into the background, and that on the other hand this consciousness is essential to expectation proper. A thing may be desired and expected, and may even be willed and expected, but, so far as in the proper sense it is expected, we must add that, so far, it is not properly willed or desired. If you do not feel the idea of the change to conflict with the present existence, you have no experience of volition, and, so far as the certain future is emphasised, this opposition disappears. On the other hand in all expectation there is a tendency for this qualification by the time-interval to drop out. The moment that this happens there is an opposition between the existence and the idea, and desire and perhaps volition may in consequence be generated forthwith. *Cf.* MIND, No. 49, p. 16.

were will, then to make a hero, or again a monster of vice, no more would be wanted than defect of imagination with ignorance and foolishness. But a resolve really is not volition, and the point of difference seems clear. A resolve is directed, and it must be directed, on what we know is not yet actual, and so is only ideal; while volition, as we have seen, must invariably begin with the present 'this'. Volition on the one hand is not confined within one moment, and yet on the other hand volition must start always from the actual present, while in resolve, if this could happen, the essential character would be lost. I do not mean that the existence which resolve confronts is always conditional, though, where this is so, resolve, we may notice, remains still resolve. Resolve may be directed on a prolongation of the present which, though ideal, is unconditional, but it never in any case is concerned directly with the actual 'this now'. Its object is sundered from the present by an interval, and is known to be so sundered; and, if it were otherwise, and if to the smallest extent resolve could deal with the actual 'now,' it would have evidently ceased to be resolve and would have passed into volition.

This to me seems clear and I take the denial of it to be an obvious error, and it is therefore desirable to ask how such an error can have arisen. The doctrine of will, we may remind ourselves, is full of difficulty, and a readiness to grasp at anything which seems likely to help is a natural weakness. But apart from this there are various causes likely to create confusion about will and resolve. (i.) Will may be taken in the sense not of actual volition but of standing tendency. (ii.) Resolve in many cases involves the actual volition of a psychical state. (iii.) There is an incomplete as well as a complete act of will, and, though resolve never can amount even to an incomplete volition, it can partake of its nature. For incidentally it consists partly in the same process and goes some length on the same road. But in resolve (I would repeat this) the existence to be changed by the idea is severed invariably by a gap from the actual present. I will now proceed to explain these three grounds of error, beginning with the last, and in connexion with this I must emphasise the distinction between complete and incomplete will.

With will taken in its full sense I agree that psychology cannot concern itself. My will is not completely realised until its end has been actually attained, even if that attainment does not take place until after my death. And for some purposes the confinement of will to a narrower meaning would not hold. But in psychology this complete sense is, I

think, inadmissible, and the process of will cannot be taken as extended beyond the limits of my body. And even these limits, some would insist, are already too wide. If will is a psychical state, it cannot, they would urge, include a physical consequence; and even a psychical result must on the same principle be excluded from will. For a psychical fact, it can be argued, must in every case be defined as what itself actually is, and it is not characterised by anything beyond to which, however probably, it may lead. But I cannot for myself, even in psychology, accept on the whole such a limitation of will. I do not agree that, when a psychical process leads normally to a certain result in the individual's body or mind, the result can never be considered as part of the process. Such a question as how, for instance, I can will successfully to recall a word or to move my hand, must fall, I think, within psychology. I cannot naturally regard such results as events external to my will, and as additional consequences the absence of which leaves my will unaffected. In volition the end anticipated in the idea is normally carried out into fact, and the process is normally recognised as a single movement of one and the same thing throughout. The removal of one part of this process leaves the whole incomplete, and to my mind modifies its character, and I cannot accept the mere beginning by itself as essentially complete.

Psychology, I agree, has to set bounds to its subject. The extent to which it can recognise physiological fact is limited. It will admit no more of this, in short, than it is forced to admit in order to justify its own account of psychical phenomena.[1] And psychology, I agree, cannot follow the process of will beyond the limits of the body, but on the contrary must take will as ended within them. While not denying, that is, the completer sense in which will goes on to a further end, the psychologist may fairly say that he is unable to consider it. And for certain purposes within psychology (as again within ethics) I agree even to a further limitation of will. The psychologist may narrow even further the meaning which he gives to the word, and may use it in a still more incomplete sense. He may take volition simply as that fact which at the present it is, without regard to anything physical, or even anything psychical, that we expect to result from it. Thus, if I will the movement of my hand, my volition, we

[1] On the one hand physiological explanation and fact has, taken for itself, no place in psychology. On the other hand, if it is anywhere contended that a difference in the physiological explanation affects materially the psychological account, I do not see how such a contention can be on principle excluded.

may say, already is there, although my hand may perhaps in fact not actually move. And, if I will to recollect, then I may go on in fact either to succeed or to fail, but in each case alike my volition really is present. In this narrower sense we may for certain purposes take volition as actual. But I must insist that, however actual so far, my will so far is incomplete.

We may in other words distinguish roughly two periods or stages in volition. The first of these stages will consist in what may be called the mere prevalence of the idea, while in the second stage the idea will advance beyond its own existence towards its physical or psychical end. And I agree that in psychology we have a right to make use of these distinctions. On the other hand I urge that they everywhere involve some abstraction, and that this abstraction may be more or less artificial and vicious. There are cases where the action follows on the idea without hesitation or delay, and the stage of prevalence can hardly be said here to have an independent duration. And again the mere prevalence of the idea may itself go beyond the idea, for it may depend on the idea's carrying itself out to some extent into the fact. An actual movement of my body, however partial, may be the means by which the mere idea of such a movement prevails. On the other hand in certain cases we may consider the whole process of will as roughly divided into two more or less separate movements. In the first of these the idea, we may say, merely as an idea gains possession of my mind, while in the second it advances further beyond itself to realise itself in the facts. And while I must insist that the first stage, if taken strictly by itself, is not a complete or even really an incomplete act of will, on the other hand, viewed otherwise and under some conditions, the prevalence of the idea does amount to an incomplete but actual volition.

But it will be objected that, if volition may ever be such an inward event, our definition of will is no longer tenable. Is not the prevalence of an idea, I may be asked, something different from its realisation in fact? In order to answer this question we must inquire in what this prevalence consists. The point is difficult, and, in order to deal with all sides of it, I am forced in passing to anticipate a future result.[1] In the presence of a practical idea we have of course an ideal change of existence, and on the other side against this we have the actual existence itself, existence merely psychical or physical as well. But in the presence of

[1] The point has been noticed briefly in MIND, No. 40, p. 10.

an idea which is willed or desired, we have another feature also. The existence outward or inward, which is to be changed by the idea,[1] is also in a special sense a not-self opposed to my inner self; and this opposition, we shall hereafter see, is essential to will. This feature may be called in a sense the idea's prevalence. For the idea is felt as something which is in one with my whole inner self, and hence nothing in me can oppose it except some element which in a sense is excluded from my self. Prevalence in this sense may however belong to ideas which I should agree are not willed, and by itself therefore it evidently is not enough for volition. And there is no reason why we should further here concern ourselves with it.

We may pass from this to consider prevalence in another sense more material to our inquiry. If an idea is to be willed, it must not merely be felt as in one with my inner self. In order to be willed it must also dominate my psychical existence, and must banish or subject to itself whatever there is contrary to its being and progress.[2] Now prevalence, taken in this sense, is clearly a process, and it may develop itself to completion through various stages and degrees. Hence we may agree that, when the process is complete, we have reached volition, but on the other side must insist on an inquiry into its aspects and stages. For here once again we may verify the presence of will as the self-realisation of an idea. (i.) The idea in the first place has to banish or subdue any idea contrary to itself, and it has to overcome hostility or inertia wherever that is found in any other psychical element. And (ii.) together with this the idea must develop its own content. It must to some extent go on to specify and to individualise further its own proper nature. As the idea, say, of striking prevails it will become at the same time less general. It will become more and more the idea of a blow of this particular kind struck by myself in my present individual character. (iii.) And in most cases, though perhaps not in every case, where the idea practically prevails, the specification of the idea will already include and consist in some part of its realisation beyond itself. The prevalence

[1] We must never forget that the existence to which the idea is opposed may be merely psychical.

[2] I do not here discuss how this sense of prevalence is connected with the former one. We have on one hand an unwelcome fixed idea which gradually dominates me, until, all opposition being overcome, it is identified with myself. On the other hand we have a desired end which I feel wholly to be mine, and which yet cannot realise itself against some part of my psychical being.

of the idea, that is, implies, as already actual in psychical and perhaps in physical fact, a part of that change which it is the business of the idea to carry out into existence. We shall understand better the importance of these aspects, when we have examined some cases where will is alleged to exist apart from a realisation of its idea.[1]

I will however first ask generally in what sense and how far these three aspects of the idea's prevalence amount to its realisation in fact. (i.) In its subjugation or banishment of antagonists, and in its possession, as we say, of my self, the idea takes a step without which it could not advance to its end. If however by an artifice you consider this aspect by itself, it will belong to the progress of the idea as a necessary condition, and will not by itself be that actual progress. (ii.) But with the specification of the idea's content the case is modified. Certainly in itself this internal development does not carry the idea out beyond its own being into fact. But on the other hand it is itself the beginning of one continuous process which beyond a certain point does so alter the actual existence. (iii.) And at least in most cases the process of prevalence has already gone beyond that point. It does to some extent, as we saw, involve an actual change of the fact so as to correspond with the idea. And this alteration, however partial and slight it may be, carries so far the mere idea beyond itself into existence. A state of mind, possessing these three aspects, is a realisation of the idea which we must admit is incomplete, but up to a certain limit it is an actual realisation. The idea has actually moved in the strictest sense on its anticipated journey. And measured by our definition such an advance may be called an incomplete act of will. A prevalence on the other hand which

[1] With regard to using the impossibility of recall as a mark of prevalence, I do not think that by this we should really gain anything. The prevalence of the idea certainly implies that the process must advance unhindered by 'me,' the 'me' being here understood not to contain any psychical element to which 'myself' is opposed. But this prevalence, we have already seen, is not volition. On the other hand the impossibility of recall, if taken in a fuller sense, would be deceptive, for it would depend on circumstances more or less accidental. To pass to another point, we may here notice the question whether an act which takes time is to be regarded as one will or as several. We may answer that, so far as the sequel does not follow automatically from the beginning, the act may be regarded as having both characters. Each new change in existence, which is made directly by the idea, may so far be regarded as a new volition. This point may become important where the idea has failed to anticipate features which arise in the actual execution, and where in consequence the will becomes, as we say, paralysed, or has to be renewed.

remained ideal and failed to include this third aspect, I should myself refuse to term even an incomplete volition. It is an approach to will which has stopped short of the actual state, and how it can seem to have reached it I shall soon endeavour to explain.

We have now to some extent perceived the nature of complete and of incomplete will, and the degrees by which completion may be gradually approached. I have pointed out how, even in a case of incomplete volition, the idea to some extent has carried itself out into fact. And where this feature is absent the idea may in a sense have prevailed, but I should certainly refuse to admit that volition has begun and that will is present. I can hardly hope that so far I have conveyed my exact meaning to the reader, but this meaning will, I trust, show itself in our examination of detail. And we may forthwith return to those cases where volition was alleged actually to exist, and where on the other hand the idea was asserted not to carry itself out. We may take first the objection which has been based on the fact of will during paralysis, and we may join with this an inquiry into what is called a 'will' for something not under our control. I shall then consider such an instance as our unsuccessful will to recall a name, and from that can pass to the claims of resolve and approval.

If a man's arm is paralysed so that in fact he is unable to move it, he is none the less able, we are assured, most fully to will this movement (See Prof. James, *Psychology*, chap. xxvi.). I do not question here the fact itself, but I should interpret it as follows. The patient perceives the existence of his limb as it is, and over against this he has the idea of its alteration. This idea possesses him, and, apart from the above perception of existence, it finds in him nothing which seems to oppose its complete realisation. The idea starts unchecked on its anticipated course and becomes more particularised, and then, at a certain point beyond this, it ceases to advance. But, although the idea no longer goes forward, there is a sense of actual volition. Now, as I understand the facts, the idea, in most cases at least, succeeds to some extent in passing beyond itself into actual fact. It moves not the part required but other parts of the body (James, *ibid.*). And, where this is the case and where such an actual movement is also perceived, I take it to explain in accordance with our definition the consciousness of will. The idea has moved forwards towards the change of fact, not only, as we say, in its own character, but beyond itself into an actual movement of the body. And this movement will, I assume, be perceived

as a continuance of its progress. And a process carried out to this point may, I think, be taken as a volition which is actual although incomplete.[1]

But, it may be urged, there are cases where the idea does not advance outwards even up to this point. In these cases the idea remains entirely within itself, and after all there is an actual experience of will. If this does not take place in paralysis, I may be told, it happens often elsewhere. It happens where I will, for example, the movement of something outside of and unconnected with my body, as, for instance, the arrival of a letter or a change of position in the furniture of my room. Now with regard to this alleged fact I do not dispute that in a sense it takes place, but as to what happens when it takes place I remain in some doubt. For myself usually, where I will, let us say, a chair to transport itself across the room, I find that I connect this anticipated movement with some bodily act of my own. A fixed glance, an order uttered inwardly or some other slight movement, goes in most cases together with the 'prevalence' of the idea; and this actual movement, I believe, enters into the process of that idea's content. And, so far as this is so, the idea once more has carried itself out beyond itself. The idea has begun an actual change of the opposed existence, partial indeed and indirect, but enough probably to give the sense of its process having passed out into fact. And there is a further point which, in connexion with all these cases, I would recommend to the reader's notice. If I 'will,' let us say, that a letter has arrived or that a chair of itself is to come towards me, I find that a vivid imagination of the event may be a condition of my willing it to exist. I may have, that is, to view with my mind's eye the letter now somewhere waiting for me, or I may have to see in imagination the beginning of the chair's advance. And, if I so help myself, I am able to reach an imperfect but actual consciousness of will, and I admit that possibly I may reach this in the entire absence of any bodily

[1] The movement is not perceived as a complete carrying out of the idea. For in the first place the part moved is not that part of which the movement was willed. And in the second place, even if the two perceptions were to some extent confused, the absence of movement also in the required part, an absence which is perceived, would lead us to regard our volition as frustrated. On the other side our volition, though incomplete, will appear as actual. For the bodily movement, following in a continuous process on the prevalence of the idea, will naturally come to the mind as a sign that the idea has passed over into the body, however inadequately. And a process carried out to this point may in accordance with our definition be taken as will, as a volition which is not completed but which still is actually there.

movement. This experience has perhaps an important bearing on our problem. We have willed so often in fact that we can will, as we say, in imagination, and while my hand is stationary I can imagine myself producing its changes. And let us for argument's sake agree that this may happen without a muscular movement. We call this volition imaginary because it is not directed upon our actual fact, and because its change is not the movement in fact of my real hand. But now suppose that, while I will in imagination some movement of my hand or of a chair, I have these objects at the same time actually visible before me. Their perceived rest must oppose the progress of my idea into the fact now and here, but on the other side their imagined motion will support its advance, and will so far give me the consciousness of will. We have only then to suppose some confusion between the object as perceived and as imagined, and the door is opened to a more or less illusory awareness of actual will. And this remark may have a bearing wider than that which appears at first sight. Where a process is familiar and where the beginning of that process is given, it is possible to gain a premature and perhaps deceptive awareness of the end. And in this way I think we may sometimes create a more or less fallacious experience of will.

The conclusion then, which so far we have reached, can be briefly resumed thus. An actual volition may certainly be involved in the prevalence of an idea, but that volition at the same time will be incomplete. But there will not be in any case even an incomplete volition unless to some extent the idea carries itself out beyond itself. Where this aspect fails there will at most be a doubtful experience, due to a confusion between imagination and fact.[1] We may verify the same result again in such a case as our will to recollect.

The idea of recalling some name or some other circumstance may be suggested to my mind, and I may decide by an act of will to carry out this recall. But the attempt may fail in fact to succeed, though the volition has been actual, and the idea, it may be said, therefore has prevailed but has not to any extent realised itself. This is an interpretation which once more I am unable to accept. There may have been in the first place a successful will for some internal utterance, and,

[1] If the mere prevalence of the idea is looked upon as a step towards its carrying itself out, and, if it comes to the mind in that character, some consciousness of will would naturally result. I could not myself however admit the actual presence of will, except so far as the prevalence of the idea incidentally involves its actual passage beyond itself as a mere idea.

apart from this, we may notice another important feature in the case. A will to recollect is a will to effect a certain change in my psychical being, and, even where this idea fails to carry itself out to the end, yet in its prevalence it may make, as we saw, some actual advance beyond itself. The possession of myself by the idea of a name to be recollected involves to a certain extent in fact the actual process of recollection. The recalling consists, that is, in the recovery of contiguous detail, and, so far as I can judge, wherever the idea of such a recall has become prevalent, that detail is in every case actually restored up to a variable limit. If so, the idea, we must say, has to a certain point realised itself in fact. If we take on the other side a case where my inability is more complete, I cannot myself verify in such a case the experience of actual volition. I cannot, I find, 'will myself' to know something, if my ignorance is too complete. Where this ignorance extends beyond a certain degree I cannot myself find a place for the will in question. I must either imagine my case to be other than in fact it actually is, or again I must content myself with the volition of something like a form of words, or else, to speak for myself, I cannot arrive at any experience of will. And this, I think, is not because volition depends on any belief as to possibility.[1] It is because the idea has failed to develop and to realise itself even incompletely, and has not passed beyond itself even in imagination. And hence, if my interpretation of this obscure fact is correct, it will fall once more under the principle which we have already laid down.

I will now return to consider further the case of resolve.[2] We saw that resolve is not volition, since will is directed always upon the present, while an actual aim at present existence must be excluded from resolve. On the other hand there are several causes which may lead to a confusion between resolve and will. In the first place, my being resolved may be a state of standing or permanent will. We shall inquire later as to the proper meaning which belongs to this phrase, but a resolve so understood, though in a sense it is will, is clearly not itself an actual volition. In the second place I may of course have willed to form some resolution, and in this case there is certainly an actual volition. But what has really been willed is the production of the mental state called resolve, and the volition here and the resolve itself are clearly not the same thing. And there is in the third place another reason why will and resolve are confused.

[1] This point is discussed later.

[2] *Cf.* here *Appearance*, p. 463.

The essence of a resolve, we have seen, divides it from volition, for it belongs to that essence that a resolve is directed on something other than the present. And yet incidentally it may imply an actual though incomplete will. The idea in a resolve may to a greater or less extent carry itself out at once into actual fact, and, so far as this process takes place, it will involve a real volition. Or again in resolve the idea may be realised in an imaginary existence, an existence more or less confused with actual fact, and, so far as this confusion happens, the resolve will be accompanied by some consciousness of will. But every such process falls, we must not forget, outside the resolve, when that is taken in its own true and special character. That character implies that the existence which is confronted by the resolve is distinguished from the existence which is present here and now simply. And, if this consciousness of difference lapses, and so far as it lapses, resolve has necessarily so far ceased to exist. In other words, when I resolve, I must take my idea as not to be realised at once now and here. And if the idea were not thus separated in my mind from a possible advance at once into the facts, resolve would have passed into will incomplete or complete. It is, we saw, not true that the existence aimed at by my resolve is always conditional. That existence may be taken as certain although lying in the future ; but in every case necessarily it is regarded as sundered from the present. Resolve on the one hand is no mere contemplation of an anticipated or imaginary case. For there is an opposition of the idea to the contemplated fact, and a forward movement of the idea to alter this fact to itself. And we have seen that incidentally this advance may imply such a change in the actual fact as amounts to a real though incomplete will. But such a change, I repeat, is so foreign to the essence of the resolve that, if it were directly aimed at, the resolve would knowingly have passed beyond itself.

There are some additional cases where it is urged that volition can be present, although in these cases the idea fails to pass beyond itself. I must however defer the consideration of what Prof. James has called 'consent,' and the discussion of any argument based on Mr. Shand's 'types of will'. I shall explain hereafter why I am forced to reject these doctrines, and I must content myself here with some very brief remarks on the subject of approval. The approval or again the disapproval of a mere idea has been held to constitute will, and such a doctrine once more is in conflict with our account. There are two ways in which 'the idea' may be here understood. It may be taken as the idea of a change to

be made in my present existence, and in this sense we have in effect discussed its claim already. There will be an actual volition so far as such an idea prevails, and so far as in its prevalence it also succeeds in carrying itself out. Apart from this process my approval certainly is not volition, and, where this process is present, my approval adds nothing to will. If on the other hand the idea were not an idea of a change here and now, volition so far would be even excluded by approval. To approve of things as they really are, or as they are imagined to exist, is to take an attitude in itself contrary to actual will. The subject of disapproval, so far as that requires any further treatment, must be deferred. Disapproval in itself is not will and, so far as it becomes will, it falls under negative volition. This is however a topic too obscured by error to be briefly discussed. I shall consider it hereafter at length when I examine some alleged irreducible types of will.

I have now dealt with several objections raised against our definition of will. They have been based so far on the assertion that the idea in will need not carry itself out beyond itself. And I have tried to show that such an assertion cannot be maintained. I must pass from this to examine some other views which in my opinion are mistaken, and we may begin with the alleged necessity in will for the presence of judgment or belief. But, before I discuss this, I will remark on a point of importance.

We have seen that the idea in volition must prevail and dominate, and this in the end means that we are moved by but a single idea. I do not say that beside this one idea no other idea can be present in will, but, if present, no other idea can be the object of will or desire. It cannot be the suggestion of a change which, felt in one with my inner self, then moves itself towards its own existence in fact. So far as in volition we have the presence of two moving ideas, one of these, unless it comes as a not-self opposed to my inner self, must tacitly or explicitly be subordinate to and included in the other. It must enter the main process as a passive accompaniment or as an active factor, and it may contribute to the total idea positively or again by the way of its own subjection or banishment. I have explained the above doctrine in a former article and to this I must refer.[1] If in will there ever remains an independent practical idea which is not thus subordinated, that idea will belong to the not-self which is opposed to myself. There is not really a

[1] MIND, N.S., No. 41, and again No. 43.

divided will and there is not even a divided desire, if these are understood as volition and as desire which actually exist. The plausibility of the opposite view comes mainly from a mistake as to what is meant by 'one idea,' and this logical error has resulted in mal-observation of the facts. But I am unable here to do more than refer the reader to my preceding articles.

This doctrine of the idea's monarchy has another side which I will now proceed to notice. The idea which realises itself in will must be the idea taken as unconditional and unmaimed. I do not mean that the incomplete realisation of a positive idea cannot be will. Under some conditions I have agreed that an incomplete process may be an actual will carried out imperfectly. But under other conditions the passing into fact of anything short of the idea in its entirety must be denied to be will. And there are cases which exhibit strikingly the truth of this principle. If my idea contains the restraint of A, and if A then is carried out into fact unrestrained, my idea, it is clear, has not been realised. The same conclusion holds where my idea was to realise A modified and subject to a condition, and where in the actual process this modifying condition falls out. In these cases the result indubitably has not come from my will. And we must again deny will where my idea has indeed been actually carried out, but where the result follows not from the idea itself but from some other condition. The future application of these doctrines will show their importance, and I must content myself here with inviting the reader to notice them. I will however add an example which I have not invented. A priest in hearing a confession may himself pass into the fault reported by his penitent, and this result may be culpable, but presumably it is not willed. The idea, we will assume, has here carried itself out, but it has done this in such a manner as to lose its identity. Provided, that is, that the idea has remained qualified in my mind as the act of another, it cannot in its proper character and as such realise itself in my person. Such an idea, while it maintains its integrity, cannot pass into will, and any consequence therefore in the strict sense is not an actual volition.[1]

I will proceed from this to examine the mistaken doctrine which I mentioned above. Beside the prevalence of the idea it may be contended that volition implies always a judgment

[1] This distinction between an unqualified and a qualified idea bears on the question why ideas do not always realise themselves. I shall deal with this point hereafter, when I have to show the means by which ideas carry themselves out.

or belief, a judgment, that is, with regard to my future or at least my possible action. This is a doctrine which I have never been able to accept. We may begin by distinguishing two senses in which judgment can be used. In its ordinary meaning a judgment about the future asserts its idea of my 'real' world, a world which includes everything which is taken as continuous with itself and in the same plane with its own 'reality'. But there is a wider sense also in which judgment may be taken. In this wider sense every possible idea is at the same time a judgment, and, in being entertained, is *ipso facto* used to qualify reality. The imaginary, the absurd, and even the impossible, are upon this view all attributed to the real, for all ideas in a sense, so far as we have them at all, are the predicates of reality. It is however not in this wider meaning that a judgment about the future is asserted to characterise volition. Indeed in this wider sense we should judge of the possible and the future as of something which *is*, and with this clearly we should have removed the distinctive essence of will. But in any case, I submit, it is not true that in volition the idea is always the idea that *I* am about to do something. I cannot admit that the qualification of the change as my act must always in volition form a part of the idea's original content. This is a point which I shall hereafter endeavour to make plain, and I can do no more here than recommend it to the notice of the reader. Its consequence, if made good, must be the rejection of the whole doctrine we are discussing, whether that is taken in a wider or in a narrower sense.

The sense in which judgment has been actually claimed to be essential to will is the narrower meaning which it more commonly bears. And the claim so understood seems to me to be in collision with fact, and the origin of the mistake can, I think, also be shown. I will point in the first place to the collision with fact.[1]

The presence of a judgment in all volitions certainly cannot be discovered. You will not find it everywhere when apart from theory you examine the facts. If you take the case of actions where without delay the result follows the suggestion, no one, apart from theory, would deny that many such actions are willed. To suppose on the other hand that everywhere, before or even during such an action, there is a necessity for the judgment that I am about, or if possible

[1] In the above I am taking belief throughout as identical with judgment, but for some purposes I should consider it needful to distinguish them sharply from one another.

about, to perform it, to my mind is indefensible. Unless you confine will arbitrarily to a certain number among reflective volitions, I cannot find this judgment, and I must express my disbelief in its existence. I will however not dwell on this point but will leave it to the consideration of the reader. It serves, if made good, as a disproof of the alleged necessity for judgment.

I will however add to the above objections an additional difficulty. In a highly developed mind and under exceptional circumstances there may happen, I think, a case of the following nature. There may be present a judgment of the kind required, and then an act in which the idea is realised, and yet in spite of this there may be no real volition. I may have an impulse to sneeze where I have also a desire to restrain myself, and the impulse may induce a moving idea of its result, and even also the judgment that probably or certainly I am about to produce it. And yet, if the act follows, and is even the effect of the idea and the judgment, the act under some conditions must and would be denied to be a genuine volition.[1] I am aware that according to some writers such a complex case is not possible in fact, and, if the judgment amounts to what we call a lively impression and a vivid belief, I am inclined to agree with them. But otherwise I think a judgment of the kind required may be present in the case I have mentioned, and yet its consequence may be evidently not genuine will. And I submit this objection to the reader for whatever it may be worth.[2]

[1] I have discussed these conditions in MIND, N.S., No. 43.

[2] Dr. Stout has adduced and discussed this instance (MIND, N.S., No. 19), and in connexion with it defends the doctrine criticised in the text. But the view which he advocates remains to me untenable and also obscure. "Volition is a desire qualified and defined by the judgment that, so far as in us lies, we shall bring about the attainment of the desired end" (p. 356). The words "so far as in us lies" may however be understood in several meanings. They might be qualified either by the addition of 'physically' or 'psychically,' and, when we adopt 'psychically,' we may do this in more senses than one. We may take volition to be complete when there is a certain judgment about the future together with desire, or we may mean that beside this a domination by the idea is required. But the discussion in the text provides, I think, for the whole of these cases, since in the main it rests on the denial of a necessity for any judgment at all. With regard to the presence of desire I shall hereafter explain that in my view desire is most certainly not necessary for will. But, to pass from this and to return to the instance of the unwilled sneeze, I do not understand that Dr. Stout could deny the possibility here of a desire for the result as well as of a judgment in the absence of will. And I may perhaps urge this as an objection, although I could not myself admit a desire here in the strict sense of actual desire. In addition I may remark that in any case 'desired' must

But if in truth no such judgment belongs to the essence of will, how, we may be asked, can a mistake of this kind have arisen? There are two reasons, I think, which have combined to make it plausible. (*a*) A judgment is the way in which we often and naturally express the fact of volition or resolve. It is not however a necessary expression or an unfailing accompaniment of this fact, and it may be so formulated as to become even incorrect and misleading. The judgment never is correct unless it refers to the volition as to a fact independent of itself. Thus 'I shall certainly do this' may mean that I am so resolved that on the occasion my volition will happen. Or it may refer to an actual volition already begun, and may assert that this process is about certainly to complete itself. But the resolve or the volition are here regarded as facts the existence of which does not depend on my judgment about them. The judgment therefore, even when correct, is not essential. It is no more than an accompaniment, and, even as an accompaniment, it need not be there. And on the other side the judgment may take a form which is not even a tolerable translation of the fact. "I want to do it, and so naturally I am sure to do it as far as lies in me," would not be the expression of a present resolve or of an actual will. It is the voice of one who passively contemplates a future state of moral drift.

(*b*) There is another reason why a judgment has been supposed to belong to the essence of will. 'One cannot,' it is said, 'will to realise an end which one regards as impossible,

be understood as 'desired to be had here and now,' and the judgment must refer to an immediate production of the result. If on Monday I have the belief or judgment that on Wednesday I shall assuredly be tempted to realise an end which I even now desire, and shall infallibly, 'so far as in me lies' and apart from interference, bring about this result—such a state obviously need not already be an actual volition, and it need not even amount to a resolve or intention. So far as the desired end is viewed by anticipation as being realised by something in the future, it is so far not willed or intended by me. You do not get present agency unless my idea is opposed to fact, real or imaginary, and against this present fact realises itself and me. I have however already explained this point in distinguishing expectation and again resolve from will. But the words "so far as in us lies" are capable of yet another interpretation. They might mean that, in order to be a genuine volition, an act must proceed from my higher or true self, and that, if it is to a certain point irrational, it must be denied to be will. I do not know how far I should attribute such a view to Dr. Stout. It is a point discussed by me in MIND, N.S., No. 43. I may say in conclusion that I have considered the remarks which (in MIND, N.S., No. 23) Mr. Shand has offered on Dr. Stout's doctrine of will. I cannot however say that in consequence I have been able to find this view clearer or more satisfactory.

and in willing therefore one must judge that the end is possible.' But surely there is no force in this unless you assume the necessity for some judgment, and this assumption, I have pointed out, is opposed to the facts. We may however in this connexion inquire how far we can will the impossible.[1] We must, I think, assert or deny a will for that which is judged to be impossible, according to the sense which is given in each case to these words. If the act is kept before the mind in the character of a thing which is impossible, no volition, I believe, can ensue. And the same conclusion holds if for 'impossible' we substitute 'doubtful'. I do not mean that an act cannot in some sense be judged to be doubtful or impossible and at the same time be willed; but an act cannot be willed if, in being willed, it comes before the mind as impossible or doubtful. If, that is, the idea remains actually conditioned in this manner, it does not itself issue in an act; and, if an action comes, it will certainly not be the volition of this idea. A judgment, we may say, that some end is impossible or doubtful prevents incidentally the prevalence of the idea in our minds, and so by consequence destroys the beginning of will. And this is true, but the more correct explanation is as follows. The idea of an action, if qualified as impossible or doubtful, is not truly and correctly the idea of that action. It is really a complex in which the simple idea of the act is an incomplete element. The act therefore, if it follows, is not the realisation of the genuine idea, and so by consequence it is not so far a genuine volition. The idea of anything as doubtful, impossible, or imaginary, cannot as such become fact, and, if an action is to come from such an idea, that idea must alter its character. Its qualification may either pass wholly from before the mind, or it may be relegated to some other world remote from practice.[2] And, so far as this happens, the unqualified residue becomes and can work as the unconditioned idea of the act. Such an action, though it may be will, is not however the volition of the original idea, and I need scarcely add that it does not require and depend upon a judgment.

I will at this point very briefly notice several fresh errors. I cannot accept the doctrine that desire is essential to will. Where volition follows on a suggestion and follows without

[1] *Cf.* here Prof. James, *Psychol.*, ii., 560.

[2] The extent to which such a division in the self can be carried is in some cases considerable. The subject is further discussed in MIND, N.S., No. 43. The reader will notice that I treat as an obvious mistake the doctrine that the idea's content is not affected by a change in its modality. This mischievous error is far too prevalent.

delay, to assume that desire in any proper sense must invariably be present seems plainly indefensible. I shall however return to this point in a later article. Another more palpable mistake is the identification of volition with choice. The nature of choice is again a subject to be discussed hereafter, but, where choice is taken in anything like a natural sense, it obviously is not coextensive with volition. And this fact to my mind is so clear that I can see no advantage in discussing it. I must again adopt the same attitude with regard to attention. If attention is understood in the sense of an active attending, I cannot verify its invariable presence in will. Such a claim, it seems to me, disappears on confrontation with fact, and I have dealt with it, so far as is required, in a former article (MIND, N.S., No. 41).

The objections, which so far we have considered, admit the presence of an idea in volition, and have been directed more or less against that idea's self-realisation. I will proceed now to those which deny that an idea is essential to will. There are undoubted acts of volition, it will be contended, where no idea of the end is even present. And such a contention, if made good, would be a fatal difficulty, but on the other hand I cannot doubt that it is opposed to the facts. In every case of will I must insist that an idea is present, and, if an idea is not present, no one, I believe, apart from some prejudice would call the act a volition. We have in this connexion to deal with the actions which are termed impulsive, and with these we may take acts from imitation and from the word of command, and, generally, whatever act is suggested by a perception. Mr. Shand again would instance here the facts of what he terms 'negative' and 'imperative' will.[1]

The above objections are based in the main on one kind of mistake, on a misconception, that is, with regard to the real nature of ideas. When such misunderstandings are removed it will be found, I think, that the objections are groundless. And I will endeavour to indicate the main errors on which they are based.

(i.) An idea (I must insist) has not always a simple character, and what we term 'our idea' or 'our object' may be often the fragmentary aspect of a complex whole. To speak in general, our apparent idea and our real idea may fundamentally differ, and this difference, if unnoticed, may result in delusion. For what we call 'our idea' may in truth be

[1] MIND, N.S., No. 23, to which article I refer the reader for Mr. Shand's views in this connexion. They will be discussed hereafter.

incomplete or again irrelevant. I have had already in previous articles, as in the present, to call attention to this truth, and the neglect of it is a source of widespread error. An idea cannot be identified at pleasure with something less or something more than itself, and the question as to what in a given case is my actual idea, may entail a careful inquiry.

(ii.) An idea may exist and may yet be unspecified and general. In order, for instance, to act on the idea of avoidance or injury, I need not have the idea of injuring or avoiding in some particular manner. The alternative, between the presence of an idea in a specific form and the absence of an idea altogether, is radically mistaken. I agree that something more particular than the general idea must exist in my mind, but I deny that this something (whatever according to the case it may be) must itself belong to the content of the genuine idea which I use. The whole assumption, if I may be plain, is the merest prejudice. In the course of the act itself the idea's content will in its process further particularise itself, but before the act the genuine content of the idea may be general. And it is perhaps sufficient here to call attention to what I will term this evident truth. Once assume that an idea must be specific or be nothing, add to this the assumption that whatever appears at first sight to be our end and object, is always really and truly so—and you may be taken far, but unfortunately away from the truth.

(iii.) An idea itself is not an image, nor is it always even based on an image as distinct from a perception. The denial of this truth is a prevalent error, and it underlies the mistake we have last noticed. But, so far as I can perceive, it is itself a mere prejudice. If a perceived object is to have a meaning and is to convey that meaning to myself, the meaning, I agree, has in a sense to be detached or loosened from the object. But this loosening does not imply always the existence of an image or images, separated from the object and maintaining themselves, for however short a time, as individual or particular. Such an assertion would not hold of our intelligence even when highly developed. Suppose that in answer to the question What has he done? or What shall we do? a feather flying in the air is actually shown, such an example to my mind is a conclusive refutation. It seems absurd to insist that here no idea and no meaning can be conveyed unless through the medium of individual images. Such images, separated from the feather and existing in a middle space *en route* until their fresh subject is reached, are to me mere inventions. The meaning in a more or less general form, is, I should say, conveyed direct from the

feather to its new subject, and the necessary middle-space with its separable images is a creature of mythology. And such a doctrine at a lower level of mind would be still more inapplicable. When a breast appears to suggest sucking, or a fruit eating, or an enemy avoidance or injury, that doctrine would insist that in the absence of individual images, existing separated from the perceived object, there is no suggestion at all. But this to me is plainly untenable. The idea here is the perceived object, so far as that is qualified inconsistently and qualified in such a way that its meaning in part is made loose from itself. This meaning can therefore be applied as an adjective to a fresh subject. And in short, generally, the identification of the ideal with separate images, and the alternative between such images and no suggestion at all, may be set down as erroneous.[1]

If we return to the objections founded on the alleged fact of will without the presence of an idea, we may now discover them to be invalid. The removal of errors will have left them without plausible ground, and, confronted with the facts, they will, I think, disappear. These facts are in general the actions suggested by something perceived, and in particular they are the acts from imitation, from the word of command, together with the acts called impulsive. And with regard to these our position may be stated as follows. If in the act an idea is suggested and realises itself, that act is volition, unless the idea in some way has lost its own character and has in effect carried out something which is not itself. If on the other hand no idea has been suggested, the act has not been really willed. This result I believe to be in accordance with the use of language and with popular opinion, and I do not suppose that it would be useful to dwell further on the matter. The appeal is to the reader who will carefully consider the issue. In every case we must ask whether a suggestion was or really was not made, and, if a suggestion was made, we must then go on to put further questions. What exactly was that suggestion, and did it carry itself out in the act, and did it realise precisely itself or on the other hand something less than or beyond its true meaning? I am content to leave the issue when thus defined to the reader's judgment.[2]

[1] On this and the preceding error *cf.* MIND, O.S., No. 49, p. 23, and N.S., No. 40, p. 5.

[2] There are a few points here which I would ask the reader to notice. (i.) Will and volition are not taken to include what is called a standing will. (ii.) To urge that the idea is often the creature of a blind impulse which it does but passively translate, is quite inconclusive. If the

From this I will turn to an objection which may be urged from the other side. Your definition, it may be said, if not too narrow, is at least fatally wide. "The self-realisation of an idea with which the self is identified—this covers," I shall be told, "facts which too evidently are not willed. When a man gesticulates so as outwardly to express his idea, this process by your account must be volition, while in fact it is not so. And you must include cases where by unconscious movement a man betrays that very idea which he is bent on concealing. Acts done in imitation will, at least sometimes, present the same difficulty, as will again instances where involuntarily we manifest our latent hostility or affection. Add to these the unwilled acts that result generally from a suggestion, if that is over-strong, or if on the other hand the mind is enfeebled permanently, or again temporarily as in hypnotic states. And the question surely, when you consider these cases, is settled. You have defined volition so as to bring this whole mass within its limits, and with such a result your definition has broken down finally."

Before I reply to this in detail I will venture to recall the general position to the reader. I am not in these articles undertaking to cover the whole ground of psychology. I am

'impulse' is entirely without any consciousness of end, then of course so far it is not will. On the other hand, given the idea, the question of that idea's origin is by itself irrelevant, unless you are asking when and how the volition arose. The real question is whether in fact the idea, when it is there, carries or does not carry itself out in the act. The act is or is not will, according the answer given to this question. (iii.) I shall deal with any objection based on the alleged 'imperative' and 'negative' types of volition, when in their proper place I dispose of these doctrines. (iv.) It may be instructive to quote from Mr. Shand's interesting article (MIND, N.S., No. 23, p. 290) what seems on another point a serious misunderstanding of fact. "If we are angry with some one, ideas of hurting or paining him occur, and we sometimes find the pain or injury has been inflicted without any prior consciousness on our part that we were going to inflict it. If we are reproached for the action, we say we did not "mean" to do it." This statement seems to contain more than one ambiguity, but I will confine myself to the words "mean to do it". Does the person using these intend to deny his volition? I should say certainly it is not so. He may intend to deny a deliberate volition or set purpose, but perhaps, and more probably, his denial refers to something else. He is saying that he did not mean to do, and so by consequence did not will, the particular act. He willed, that is, to injure in general but perhaps not to strike, he willed to strike but perhaps not with such a heavy stick, and at all events he did not mean that the blow should fall where it actually fell, and so did not will the particular result. The true question here is about the actual content of the idea, what that was, how unspecified it was, and how far the individual result can be taken as its proper self-realisation. When the facts of the case are ascertained and when they are approached in this manner, I cannot see that they really present any difficulty.

offering a definition of will which claims certainly to hold good everywhere. It claims, that is, wherever it is applied, to remain consistent with itself and with the common understanding of the facts. Hence I consider myself bound to deal with any case that is offered me, if that case is so far defined that one could decide in practice whether it is or is not volition. On the other hand I cannot fairly be asked to explain mental situations which are perhaps excessively obscure or otherwise difficult, merely because they are offered unexplained as an objection. I have to state the principles by which all such cases must be judged, and I am bound to show that when we judge them, and so far as we judge them, the principles hold good. But if a psychical state is so ill-defined that the person who offers it is not prepared exactly to describe it, or to decide if in practice it would be accounted a volition, I cannot be expected to discuss such a fact. Whatever psychical state, in short, is produced as an objection, must, so far as is required, be described by the objector himself. And I hope that on this point there may be a general agreement.

This being understood, I proceed to consider the instances offered above, and I find that I can at once dispose of a considerable part of them. The idea which in will realises itself is the idea of a change to happen here and now in my existence. But it is obvious that in gestures, or in whatever may be called the mimic expression of an idea, the idea does *not* contain the element of my changed existence, and therefore in such a change the idea does *not* carry itself out. The gesture may as a gesture be willed, and if so we of course have volition, and a volition which exactly corresponds with our account. But, if the gesture is unwilled, the change in my existence is indeed caused by the idea, but on the other hand it never was contained in that idea. And, not being contained in the idea, it cannot have been carried out by it. The idea has not realised itself, and by our definition there has been therefore no will. The same thing holds of those movements by which I involuntarily reveal the place of a hidden object. These movements come from my idea and they betray it, and yet you cannot say that the idea has realised itself in them. For the idea of an object in such or such a place is not the idea of my change. The idea of my directing a person to the object, if that idea were unconditioned and so carried itself out, would by our definition be will. And the act would, I think, be so accounted in practice. On the other hand if the same idea is present in subordination to, or even coupled with, the idea of my

preventing its result, then that result, if it happens, is not a volition. It has realised but a fragment of my total idea, and such a fragment, we have seen, is not my idea truly. So again with our involuntary instinctive movements of affection or hostility. If these do not in any sense come from an idea of their happening as a change in my present existence, they are not willed. And, even if they result from that idea, they are not willed, unless the idea became unqualified and expelled or subordinated its rivals. For otherwise it was a mere element in an ideal complex and was not properly an idea. But if the idea dominated, the act has been certainly willed, and in practice it could not be disowned as volition.[1]

With regard to acts done from imitation there is room for considerable doubt. But the doubt applies merely to the facts of each individual case and does not affect the principles on which our decision is formed. Imitation I use here to cover cases where the perception of something done by or happening to another leads in me to the occurrence of the same action or state. And taken in this wide sense imitation, I presume, must occur at a stage where the ideal suggestion can hardly be supposed to exist and carry itself out in the mind. Whether this wide sense should be narrowed we need not inquire, nor can I even touch on the difficulty which attaches to the beginnings of imitation. We are concerned here merely with the principles on which such acts are asserted or denied to be will, and about these principles I see no occasion for doubt. Where there is no idea of a change in my existence, there is by our definition no will, and the same conclusion is even more obvious where no idea at all is present.[2] And the result again is not willed if the idea does not of itself carry itself out. And once more, so far as the idea realised is but one element in an ideal complex, we must so far deny volition. The result from any idea which is qualified incompatibly with its own self-realisation, we have seen, cannot be will. The priest who, hearing confession of sin, through that hearing sinned himself in like fashion, need not, we have seen, have actually willed this result.[3] In

[1] I may once more remind the reader that this subject has been discussed by me in MIND, N.S., No. 43.

[2] We must not forget here that an ideal suggestion may come direct from a perception, and that usually, though not always, the presence of such a practical suggestion in me involves *ipso facto* the dropping out of the element of an alien personality.

[3] The reader will remember that I am not speaking here about degrees of responsibility. I am asking what I at least regard as a very different question, What is and what is not a formal volition? *Cf.* MIND, No. 43.

order here to pronounce on the presence or absence of actual volition, we must be further informed. The idea may have remained involved with another's personality, or may have freed itself from that condition, or it may again perhaps have turned that condition into an element in a new complex idea of sin. In the two latter cases the result presumably is will, while it is otherwise in the first case. But in view of the endless complexity of fact we may well qualify this sentence, and it is better to say that will is absent or present so far as each situation is realised. We must repeat this conclusion wherever an act is suggested by another's personality through imitation, through the word of command, or in any other possible manner. It is not enough to know that the result has arisen from an idea, and has even in a sense come from the idea of a change in my existence. We have in every case, before we pronounce, to ascertain the details more clearly. Was the idea qualified by a condition such as that of an alien personality, a condition which makes it impossible that the idea should as such be realised in me? The result, if so, has not realised the genuine idea and is so far not will. On the other hand, if the suggestion was freed from that alien condition, how far was it freed? The idea of another man striking, if as such it causes me to strike, is so far not a volition. And the same conclusion holds if the idea was of another desiring or ordering me to strike. The question of the idea's qualification in any given case is a question of fact, and, before that case is used as an objection, this question must be answered. And, however it is answered, my difficulties are at an end, since they seem to come solely from the obscurity of the individual case. At the risk of wearying the reader I will illustrate this further by the case of action under threat. If for instance a man signs a paper when threatened, is the act a volition? In order to answer this question we must be informed of his precise state of mind. Was he moved in effect by the mere overpowering force of the suggested signing? Did he again act on the mere idea of escape with momentary oblivion of all else? Was it the idea of escape merely by writing his name, or again by writing his name with a certain meaning, and, if it was the latter, what was precisely the actual amount of this meaning? When these questions are settled we may hope to decide as to the presence of a volition, and as to the limit up to which that volition extended. But, while the fact remains obscure, it is no fault in the principle if it cannot be applied. We may give the same answer with regard to acts performed in hypnotic states, whether natural or induced, and again in madness and gener-

ally under abnormal conditions. The question here as to the presence of formal volition is not, I must repeat, the question as to the existence and amount of responsibility. A man may will that for which he has little or no moral responsibility, and he may be morally responsible for that which he has not formally willed. But as to the presence of volition we must be guided by the principles already laid down. And these principles can, I submit, be applied successfully to every case which has been freed from obscurity.[1]

We have now, I hope, defended our definition from the charge of undue wideness. It will include no consequence which leads to collision with general usage. On the other hand the denial of an idea in will, we have seen, can in no case be sustained. We endeavoured to explain the various points contained in the realisation of itself by an idea, and argued that these points are without exception necessary to volition, while some other features, such as belief and judgment, are not essential. And we defended the distinction between a complete and an incomplete act of will. We have so far neglected the latter part of our definition, and have not discussed the sense in which the self is identified with an idea. In the following articles I shall endeavour to fix the meaning of these words, and in several points to make clear what may so far have remained doubtful. But, before proceeding, I will seek to remove yet another mistake.

It is often held that the genuine object which we desire, and which again we aim at in volition, must be something which when attained falls within our existence. The end, it is contended, must be realised for us, and it is so realised when our idea passes into a perception. And beyond such a perception, it is urged, we can desire and will nothing. I have some years ago remarked on this mistake (MIND, O.S., No. 49, p. 21), but I will attempt very briefly to deal with it here.

We have already noticed the view according to which volition does not pass beyond the idea. The present doctrine is an error of a different kind, and it concerns the meaning

[1] If the suggestion of an act remains so involved with another's personality that it does not free itself, or again become the idea of my doing the act because of that other, the act is not volition. To take another case, if the resolve for a future act leads to action immediately, the act is not will. It fails to be will, because the idea was incompatibly conditioned. There was at most a partial will in the sense in which that has been explained to belong to resolve. The above doctrine as to a foreign personality raises, I may remark, no real difficulty with regard to acts done in common.

contained within the idea itself. It maintains that I cannot even aim at anything which is not to be experienced by myself. And this doctrine, though based on a truth, is itself certainly erroneous. I will pass by that form of it which regards my pleasure as my one possible end, and will confine myself to the view that I cannot aim to realise anything unless that is to be perceived or experienced directly by myself.

If this were true it would in the first place condemn some experience as illusory. No one apart from theory doubts that he can desire and will events to happen after his death. And the suggestion that his real aim is not those events, but is his own present certainty, would be dismissed as ridiculous. The objection that after death a man's end cannot be realised for him, would be met by the reply that he never imagined his end could be so realised. An illusion doubtless is possible here and is sometimes present in fact, but it certainly does not exist in fact necessarily and always. It is in short the belief in this illusion which itself is illusory.

You may urge that a desire, which is not satisfied for my direct knowledge, must remain unsatisfied, and you may argue that in the end I can desire only that which would satisfy my desire. But in psychology, I reply, we can hardly insist on truth which is to be true in the end. And certainly we cannot assume as self-evident that all desires must be able to be satisfied, or identify my actual aim with whatever in the end that should involve or entail. You cannot argue, in short, that I have no desire for a certain object, if I perceive, or at least might perceive, that as such it would not satisfy me. For that personal relation to myself, which is implied in satisfaction, need not enter into the actual content of my idea. Desire is an inconsistent state, I agree, and its inherent contradiction, I agree, should be removed by satisfaction. But I cannot conclude from this that there is in fact no desire except for an end taken as attainable, and free from all inconsistency whether noticed or unnoticed. If you keep to the facts as observed, they are not in harmony with such a conclusion. And if you wish to make the mere existence of a mental state depend on its ultimate self-consistency, I cannot think you realise the effect and the ruinous sweep of your principle.

Volition (and in this respect it diverges from mere desire)[1] does imply a change to happen here and now in my psychical existence. And there is no will, we have seen, unless

[1] I shall return to this point hereafter.

the idea has begun to carry itself out. This process so far may be said to turn my idea into a perception for me, and this perceived alteration may so far be said to be involved in the object of my will. But it is not true that the process always must end at this point, and it is not true that the process is intended always to end there. If the idea of an event after my death is to be realised by my will, that process involves an immediate change in my perceived existence, and my idea so far must become a perception for me. But to maintain that no more than this was contained in my genuine idea, and that, with so much, my genuine idea has completely carried itself out, seems indefensible. The will is so far actual, but so far it is not complete, and it has stopped short of the goal which most certainly was aimed at. Psychology, we have agreed, may at a certain point cease to consider the process, but it must not, on this or on any other account, falsify the actual content of the idea. The general nature of that content is a difficult problem to be discussed in a later article, but we cannot take it as confined always within the limits of my perceived existence.[1]

[1] I do not here discuss another possible ground of the above mistake. This ground would consist in the doctrine that my psychical states, such as ideas and perceptions, cannot also and at the same time be more. On this point see MIND, N.S., No. 33, pp. 5-7.

II.—THE UNITY OF PROCESS IN CONSCIOUSNESS.

By Henry Rutgers Marshall.

I.

§ 1. "The besetting sin of the psychologist," says Dr. Stout,[1] "is the tendency to assume that an act or attitude which in himself would be the natural manifestation of a certain mental process must therefore have the same meaning in the case of another. The fallacy lies in taking this or that isolated action apart from the totality of conditions under which it appears. It is particularly seductive when the animal mind is the subject of inquiry." Although I agree entirely with Dr. Stout in this particular, I think his arraignment applies more aptly to the biologist than to the psychologist; for if in our day this particular sin besets the psychologist, it may be fairly said to enslave the biologist.

But if it be true that careless biologists are often thus led to make absurd assumptions of mental capacity in animals fully comparable with those known to exist in man; it seems equally clear that in revulsion from such illogical conclusions the more careful investigators are in danger of making equally absurd denials of mental capacity in animals where there is very strong evidence of its existence.

The study of the relation between mental states and bodily activities is however one with which the scientific biologist as such has nothing whatever to do. If he discusses this relation he must desert the field of biology and assume either the rôle of the psychologist or that of the metaphysician. No objection is of course to be raised to such shifting of ground, if it is realised and acknowledged; for all agree that the investigations of the biologists have thrown much light upon the problems of psychology, and in the end this must prove to be helpful to the metaphysician as well. But we surely should protest strongly against the careless change

[1] *Manual of Psychology*, p. 22.

from one point of view to the other; for in so doing even the best of our biologists are constantly tempted to treat consciousness as a *deus ex machina* which can be appealed to whenever they are balked in their attempts to explain specially complex or remarkable types of animal activity.

Biologists, strictly speaking, are students of living forms and, as such, of nothing else: and it is but fair to say that for the most part they maintain this position quite consistently, this being especially true of those who limit their attention to the nature of vegetable life. Like the physicist or chemist, the biologist in the main is content to consider quite objectively the phenomena observed; *i.e.* he studies the facts without reference to any hypothesis as to the relation of consciousness to the changes occurring in the living objects under observation.

In fact he cannot maintain a consistent position unless he deliberately avoids all reference whatever to phenomena of consciousness in the course of his investigations; there is much to be lost, and nothing to be gained, to his science by the abandonment of this attitude. Moreover it will appear in what follows, I think, that if, as a biologist, one persistently maintains such an attitude, he cannot fail to be rewarded when he leaves his special field of work, and joins with the psychologist or with the metaphysician in studying the implications of the notion that consciousness is related to bodily activities.

In the following pages I shall consider some of the results reached in studying the relation of mind and body by one who maintains consistently the attitude proper to the biologist so long as he studies the physical aspects of the problem, assuming the attitude proper to the psychologist only when he turns to the consideration of the psychic aspects.

It is to be acknowledged of course that this is not an altogether easy task, for in truth it is asking a good deal of us poor mortals to demand that we keep out of mind our own thoughts and emotions when we see the higher animals acting in ways familiar to us in our own lives. Nevertheless it appears to be possible for the biological investigator to imagine himself a "spirit," if we may use the term, with such full capacity for scientific observation and analysis as man displays, but without any thought that his observations and analyses are aught else than interesting modifications of his consciousness; without any knowledge that his consciousness is related to any human body; and with no notion whatever that any form of consciousness has any connexion with animal activities. Such a position I shall

ask the reader to maintain throughout the first division of this article.

§ 2. Let us suppose then that such a "spirit" finds himself studying the nature of our little world. He finds, in all that he observes, evidence of what he chooses to call physical and chemical reactions which are displayed in all the separable objects on the earth's surface. But among the vast array of these objects he discovers in a relatively small number certain unique characteristics which lead him to speak of them as being endowed with life.

These living objects at first sight seem very different indeed from non-living objects; yet he finds it often difficult to differentiate living matter in its simplest forms from non-living matter, and sees that there is much evidence of the existence of a deep-lying unity between the two apparently diverse forms, the nature of which unity he is perhaps unable to discover.

We may suppose however that he does not pause to consider this particular problem, but gives his attention to the special qualities of living bodies. When he does so he notes perhaps the fact that living bodies grow; and that under certain conditions they reproduce their kind; *i.e.* out of their very substance appear new living bodies which in form and mode of action are, or eventually become, apparently identical with those from which the newly formed bodies arise.

We may suppose that he at first undertakes to study the nature of growth. If he does so he discovers that although it is a most complex phenomenon as observed in the higher animals, it can all be traced back to reproduction of like kind; for he notes that growth itself seems to consist in the reproduction of new living bodies which he calls cells, and which in form and mode of action appear to be exactly like those cells from which they arise. Upon further thought however he perceives that this exactness of likeness must be an illusion due to the failure of his capacities of observation; for it is evident that as organisms increase in complexity the several parts which grow in accordance with this general law of cell reproduction are immensely different in form, and in mode of action; and he judges that this can only be so because there have been unobservable differences in the newly formed cell parts from the very beginning of the growth of the complex animal.

He thus notes in all living matter the common characteristic that under the proper conditions it may reproduce what he calls its kind: and although he also recognises that from

the highest to the lowest forms of life the exactness of this reproduction must be merely apparent and not real, *i.e.*, that a measure of variation must be assumed to exist in all forms of reproduction; nevertheless he cannot but be impressed with the evidence that a unity of process exists through all the apparent diversity which he at first observed in the forms of living bodies.

§ 3. Our spirit may now be supposed to observe another characteristic of living forms, a characteristic which perhaps first attracts his especial attention when he studies certain living forms of very high complexity, but which he traces back through all the lower forms of life. He observes that if any bit of matter, whether lifeless or alive, receives a stimulus from its environment it reacts upon this stimulus physically or chemically, and in so doing becomes a different thing, being altered either in position or form, or in constitution. In the case of the lifeless body it remains apparently, to all intents and purposes, in its altered condition until other forces act upon it: but in the case of the living body the transformation is not thus relatively permanent; there appears to exist within it a capacity to become again what it was before its reaction to the stimulus: by some inherent process it seems to be able to regain the ability to react again in response to a similar stimulus, and apparently in the same manner as before.

But in pondering over this observation our spirit finds his attention called to certain facts which lead him to question whether the capacity to react in the very same manner ever is exactly regained. For in the first place he notes that living matter as observed in its lowest forms in protoplasmic masses is always "differentially responsive. The nature of the stimulus and the nature of the conditions decide what the nature of the response shall be;"[1] and it appears to him probable that this observable differentiation of response indicates that some alteration is effected in the structure of this simple protoplasmic body at the time of its reaction; and that therefore the form of its future functioning must also be altered, even though he be unable to observe the change. He indeed finds it impossible to believe that the receipt of a stimulus, and the reaction thereto, can leave the body exactly what it was before the reaction; and if its structure does not remain unchanged, then evidently the appearance of renewal of capacity to repeat exactly the same

[1] C. Lloyd Morgan, *Animal Behaviour*, p. 296.

reaction, in response to a recurrent stimulus of the same nature as the first, must be an illusion due to failure of his powers of discrimination.

He is strengthened in this view, when he studies the more complex forms of life, by the observation that although in a large part of their activities a capacity to react a second time in exactly the same way to a recurrent stimulus is apparently exemplified, nevertheless there are many cases, even though they be relatively few, where the organism very plainly does not react to the recurrent stimulus in the second instance in the same way in which it reacted in the first instance. The most marked examples of this change of reaction he chooses to call "learning by experience": and finding that this characteristic is less noticeable where environmental conditions are relatively simple and permanent, and the living bodies are less complex; and more noticeable where the environmental conditions are relatively complex and changeable, and the living bodies are highly complex in their composition; he is led to ask whether it may not be that this "learning by experience" is a characteristic of all living matter, which at times fails to appear as such merely because it is observable in but relatively few cases, and is indiscernible in all others.

He finds it possible to hold, in conformity with this view, that the occasional special emphasis of this characteristic in the more complex living forms is due to the very complexity of their organisation; for he realises that in such cases alterations of reaction to a given stimulus must effect primarily what are only superficial, and relatively unimportant, parts of the complex whole; and that he therefore should not expect these changes in minor parts to affect the reaction of the whole organism observably except under special conditions. He sees indeed that he should expect this very complexity of organisation to prevent, in general, observable changes in a form of reaction; for clearly in such cases the stimulation is likely often to call for incompatible reactions in minor parts which will tend to prevent any appearance of change in the reaction of the whole organism.

Furthermore he observes that when in complex organisms such a balance of diverse tendencies does happen to be overthrown, the result will be more likely to be marked than in cases where the stimulation more directly affects the whole body of the organism; and he thus sees a possible explanation of the marked display of this "learning by experience" after hesitancy and vacillation, as it is observed in the more complex living bodies; and a further reason why it is more distinctly

observable in these more complex living bodies than in the simple ones.

Whether these explanations shall finally prove to be satisfactory or not, he feels on the whole that he is probably correct in his assumption that this "learning by experience" is a capacity inherent in all forms of living matter from the lowest to the highest, and this conclusion enforces his conviction that there must be a unity of process in all the reactions of living matter.

§ 4. We may suppose that our spirit has been led, as we men are led, to draw a distinction between vegetable and animal life. It is true that when he examines the very simplest forms of life he finds difficulty in determining whether they should be classed as animal or vegetable; and this fact emphasises again in his mind the unity of process already observed in all of living matter. Nevertheless the difference between these two forms of life is sufficiently marked in all of the more complex organisms to lead him to make a broad use of the distinction.

He may be supposed further to take greater interest in animal than in vegetable life, and may for this reason feel warranted in devoting his attention almost exclusively to the former. In taking this position he may also choose to lay aside all questions concerning processes of growth and reproduction, which are obviously as marked in the plant as in the animal, and to confine his attention to certain very interesting characteristics of animal life, *viz.*, to what he chooses to call "animal behaviour".

§ 5. Our spirit cannot go far in his study of the varied activities of animals without observing that many distinctions in the nature of these activities, which appear to him at first sight to be clear, are co-ordinate in a great measure with differences in the complexity of the living bodies which he is studying.

When he considers the nature of this complexity he finds that although he may conceive of a perfectly simple living mass, nevertheless as a matter of fact he is entirely unable to discover a living body which does not appear to be really a complex of elements bound together in some mysterious way into a system. The system, whether relatively simple or enormously complex, is composed of what he chooses to call elements. These however are not isolated bits of living matter; they are what they are because they are elemental parts of a system: and the system is what it is because it is,

as it were, composed, of these elemental parts;—because these elemental parts are so bound together that the activity of any one element must necessarily affect the activity of the mass itself, and also directly or indirectly the activity of all other elements of the system. Indeed it is the marked characteristic of these elements that they display a capacity to initiate in themselves activities which result in modifications of action in the whole system to which they belong.

If he considers the behaviour of any animal, and views the activity of its system as a whole, he finds himself compelled to look upon it as a pulse of activity of the whole mass, in which the activity of some elementary part or parts is exceptionally noticeable, but for all that not separated away from that of the whole mass. The activity of the system as a whole is in fact merely differentiated in form by this special activity of the part.

Our spirit further notes that in all but the very lowest forms of animal life the whole system bears evidence of being really a system of minor systems, in which each of the major elements of the whole system, as it appears when first viewed, is really a minor system of elements. Each part of the animal's body he finds to be a special minor system; which minor system is co-ordinated with other minor systems to form a whole larger system. And he perceives that in the more complex animal forms, which he chooses to call the "higher," this binding together of systems within systems, as they are themselves co-ordinated into one great system, is enormously intricate.

In all these observations he again sees evidences of a unity of process in the nature of life as exemplified in those animal activities to which he has chosen to restrict his attention: and furthermore begins to suspect that this systemic complexity may serve to explain in great measure the occurrence of those apparently divergent special activities which at first seemed to him to stand so distinctly in opposition to that unity of process so emphasised in the course of his earlier studies.

§ 6. In studying animal life as a whole we may imagine that our spirit has thus far carried on his investigations in some region, say in the interior of Africa, where human civilisation could not attract his attention. He may be supposed to have observed men, and to have considered them as forms of animal life in which social tendencies are noticeable; but it is probable that he would find himself interested in men principally because they display the complexity of high

organisation in forms which he can most easily study. He would however see no special reason for separating men in classification from all the rest of animal life; and indeed would probably be inclined to think that were his own powers of observation sufficiently microscopic he might find the study of the social life of the ants and bees more interesting than that of men whom he has seen only under barbaric conditions.

If however by chance he happens some day to turn, let us say, to the Western coast of the Continent of Europe he at once finds his attention riveted upon this special animal man, which under the conditions in which he now observes him shows not only most distinctly the capacities which he has found of greatest interest in his general investigations of animal life, but also what appear to be entirely new developments of these capacities.

Evidently he undertakes the study of civilised man with the notion firmly fixed in mind that in all animal activities hitherto studied there exists a unity of process. But the activities which man displays in his most fully developed social life are apparently so very diverse in character that he feels bound to consider again whether this apparent diversity is compatible with the conclusions previously reached.

In undertaking this investigation he recalls his observation that the complex animals are systems of systems, and notes that in man this complexity of systemic co-ordination is observed in the very highest degree. And at this point perhaps he finds himself studying especially the action of the nervous system of man which he finds to be the immediate source of the activities of the human body.

§ 7. Looking upon this nervous system as a system of systems of great complexity, our spirit recalls his conclusion, previously reached, that no reaction in any part of a system of systems can fail to modify in some measure the total pulse of activity in the whole system of systems. But he notes at once a fact which is apparently incompatible with this conclusion: for he finds that certain reactions in parts of a man's body, and which he chooses to call "reflex actions," do not seem to affect at all the pulse of activity of the whole system of systems. This difficulty is speedily cleared away however when he observes that in many cases which he is able to study exhaustively, the minor system which controls these "reflex actions" is almost completely disconnected from the mass of the system of systems, and he judges that for this reason the activity of such a minor system can probably only

occasionally, and under special conditions, affect the whole pulse of activity of the system of systems sufficiently to produce in it observable effects; and this, if true, serves to account for the apparent incompatibility here considered.

He sees also in this connexion that under certain conditions of activity in the system of systems as a whole, there will be involved a practical disconnexion, or "splitting off," from the main system of systems, of certain minor systems which are usually part and parcel of the complex system as a whole; and this for the simple reason that the rhythm of activity in the great system of systems is likely at times to be incommensurable, if we may so speak, with that in the minor system which is thus "split off". He is thus enabled to understand how it happens that certain stimulations of a part, which usually produce reactions of the whole system, at times produce no apparent reaction of the whole system whatever, but only reaction in the special part which is immediately stimulated.

§ 8. If then our spirit turns his attention to the complex system of systems observed in man's nervous structure when viewed as a whole, he finds certain minor systems α, the activities in which are directly related to stimulations reaching the body of the man from its environment. Again he finds other minor systems γ, the activities in which are directly related to reactions of the man's body upon its environment. And then he notes further a highly complex system of minor systems β, the activities in which seem to be related to the co-ordination of the activities in the receptive minor systems (α) so that they bring about the activities which he notes in the reactive minor systems (β) (see figure 1 below, p. 490).

He thus perceives that, in such a complex animal as man, what is really a unity of process must, if superficially viewed, appear, as it has at first appeared to him, as specially marked differences of process: and he is thus confirmed in his view that in all these neural activities whether simple or complex a unity of process is maintained;—that in all parts of the complex system of systems the form of activity is the same;—that all along the line from the activities related to stimulation from the environment, to those related to reactions upon the environment, in each part successively active, stimulation and reaction occur in one and the same act.

He sees furthermore that although time is required for the spread of the influence of a special activity arising in systems α, through systems β, until they result in activities in

systems γ, still there is no ground in this for questioning the unity of process: in other words he becomes convinced that the apparent differences in form between the activities in systems α and β and γ are due to the fact that in observing any one of them he is viewing but a part of the whole pulse of activity in the system of systems, and not this pulse of activity as a whole.

But he sees that if he is to take a broad view he must of necessity consider this whole pulse of activity in the whole system of systems; and this he pictures to himself perhaps as the complex vibration of a sensitive elastic mass the surface of which is disturbed by ever-varying waves producing at each special moment what he chooses to call a special "neurergic[1] pattern". These "neurergic patterns" he sees must vary in form, from moment to moment, as the result of the appearance of special activities in special elements of the complex neural system.

He notes also that the emphasis of activity at any moment may come either from minor systems α, or from minor systems β, or from minor systems γ. He perceives it is true that the most emphatic elements are usually those which come from systems α, but this does not lead him to judge that the form of the "neurergic pattern" of any special moment is entirely due, either directly or indirectly, to the activities in systems α, which though emphatic are in fact less broad in their influence upon the form of the "neurergic pattern" than the activities in the highly complex systems β.

He notes also that the complex systems γ are connected with certain activities of special minor systems of the α variety which, arising in connexion with the activities in systems γ, react upon systems β; and he notes that these γ-α activities, as he chooses to call them, produce a marked influence upon the "neurergic pattern" of the moment when the γ activities are predominant, *i.e.* of the moment of reaction upon the environment. This fact however does not lead him to abandon the notion that the form of the total pulse of activity in the whole system of systems at any moment is due as well to the influence of the activities in the β and γ systems as it is to those in the α systems. In other words although a careless view might lead him to say that the form of the "neurergic pattern" at any moment is determined alone by activities of the α or γ-α orders, or by the derivatives of these

[1] There seems to be no word in current use signifiying "pertaining to the activity of nerve". "Neural" means "pertaining to nerve": and "neurotic" has come to connote morbid activity. The reader will therefore pardon me for coining a word to meet my needs.

activities, yet he sees upon second thought that such a view cannot be correct. While he agrees that these α and γ-α activities in a great number of cases give the emphatic form to the "neurergic pattern" of the moment, he is led to hold that all the activities from α to β, and from β to γ, and from γ-α to β again, have at each special moment their influence upon the form of the whole "neurergic pattern" as it appears in the pulse of activity of the whole system of systems.

§ 9. When our spirit considers the form of the "neurergic pattern" as a whole, from another point of view, he sees that at any moment the activity of the whole system of systems must usually show a phase of general activity in the mass of the great system, with a certain increment of activity appearing in some more or less complex part. In other words, if he observes at any chosen moment the whole pulse of activity, he discovers some more or less complex elemental activity which accrues as it were as an increment to the less emphatic activities taken as a whole, and which being predominant in efficiency tends to give distinctive form to the "neurergic pattern" of the moment. This our spirit may be supposed to symbolise as in figure 1 below (p. 490), where for his present purpose **P** may be made to represent the increment to the activities of the whole complex system made up of minor systems α, β, and γ.[1]

§ 10. Our spirit sees further that in certain cases there must exist "neurergic patterns" of a still more complex form, in which the increment to the general pulse of activity must itself consist of the activity of a large minor system of systems: and he sees that often this minor system of systems, the activities of which form the increment to the whole pulse of activity, must itself display the general characteristics of the whole pulse of activities: *i.e.* that the activity of this minor system of systems must itself appear as a mass of relatively unemphatic activities to which the activity of some special element of this minor system of systems appears as an increment. This he may be supposed to symbolise as in figure 2 below (p. 492) where for his present purpose the darker portions represent the complex increment to the whole mass of activities, which increment itself appears as a mass $([Q-P]+R+S+T+U+V+W+X+Y+Z)$ to which P appears as an increment of a second order, so to speak.

[1] *Cf.* my article *Consciousness, Self-Consciousness and the Self*, MIND *N.S.*, 37, p. 104 ff.

§ 11. Our spirit notes moreover that the increment to the whole pulse of activities is aroused by minor activities which come from diverse sources, from moment to moment; and he looks upon it as natural therefore that he finds himself thinking of the activity of the increment as in its very essence ever variable. And on the other hand he sees that although the activity of the mass to which this increment accrues must necessarily also be changing in form in numberless particulars, as the result of variation in the activities of the countless elements of which it is composed; nevertheless, inasmuch as these variations are undifferentiable and unobservable, the mass itself to which the increment accrues, must usually appear to be in the main relatively permanent in form and constitution.

In all these observations our spirit has found accumulated evidence of a unity of process in the activities of man's nervous system, and at the same time has discovered how it happened that in viewing the action of parts of the whole system he was at first led to assume the occurrence of diverse activities in one and the same system due to diverse processes.

§ 12. Our spirit may now be supposed to turn his attention to certain other marked differences of activity than those above considered, which he observes in man and also in animals lower in the scale, and to ask whether they also are explicable in terms of the unity of process thus emphasised in his studies.

He notices for instance in some cases immediacy of reaction to a stimulus, and in others a marked hesitancy. This he is able to account for by the fact that in the one case the stimulus calls for little else than one series of reactions in its course from minor systems α to β and to γ: while in the other case, in consequence of the unusual nature of the stimulus, and the extreme complexity of the systems stimulated, the original stimulation arouses diverse and to some extent incompatible series of activities in β which must be co-ordinated before a resultant form can be given to the activities in γ.

§ 13. Our spirit notes further, and in man especially, the marked change in the forms of reaction already referred to, and which he calls adaptation. Under certain conditions of stimulation he sees what appear as trial of one form of activity with failure, then of another with success, and a persistence of the successful form of activity in cases of

future stimulation of the same general nature. He finds no reason to draw any line between man and the other animals in connexion with these observations, merely noting that this special characteristic is more marked in highly developed man than it is in the other animals.

And when he asks himself whether this special characteristic is compatable with his notion of the unity of process in animal activities, he sees at once that he has here merely a marked case, exemplified in a whole complex organism, of that "learning by experience" which he has become convinced must occur in all the lowest forms of elemental life, as well as in all the higher forms.

He is led then however to ask why man as an organism does not show this characteristic in all of his activities; and why some animals as wholes show it at times in marked form, others in very minor degree, and some apparently not at all.

To this question he may feel that he is unable to make a thoroughly clear and satisfactory answer: but he believes he sees evidence that the difference between evident adaptation of this kind, and apparent non-adaptation, may be due merely to his own incapacity to observe with precision. He perceives that an activity once aroused in a part will tend to persist, and that a "neurergic pattern," once given in a system, will tend to recur when properly stimulated, until its form is disturbed; and it suggests itself to him that the apparent absences of adaptation which he is considering may be due largely to this fact. For he notes that the self-evident adaptations through error to success are observed most often in the most complex forms, which he may assume have gained no *quasi* permanent "neurergic pattern" before the appropriate adaptative activity supervenes, but which may gain such a typical "neurergic pattern" when the appropriate activity has once been aroused. He notes that after all the most marked of these evident adaptations of the whole organism are but superficial; that the "ground swell," if he may so speak, of the "neurergic pattern" is not greatly altered by them; and he judges that this tendency to the recurrence of the ground swell in the "neurergic pattern" is universal in all animal life; and that it becomes a more important feature of life, as life becomes more complex, so that when it fails to recur the disturbance of the system must be important and therefore more noticeable.

§ 14. At all events our spirit does not feel that these observations in any way warrant him in drawing a line between

some animals and others,—between man and other animals —on the basis of this distinction: nor does he see any reason why he should on this ground allow his conviction concerning the unity of process in animal activities to be shaken in any respect. For he sees that the basis of the adaptation of the activity of a complex system of systems to new conditions must always lie in the emphasis of some partial activity in some minor system of the great system of systems: and that the capacity to effect this emphasis of a partial activity is one which inheres in all systems, whether relatively simple or complex, and that when effective it must give rise to a variation from the reaction which he has looked upon as typical. And he sees that although this capacity may be more or less marked in different animals, and in some may appear to be entirely absent; yet in truth this appearance must be due to the failure of his capacities of observation.

Indeed, when he considers even the most baffling cases where there is hesitancy before action, and trial and error, and then trial with success, he perceives that the basis of the final successful adaptation must here also be the same emphasis of some partial, more or less complex, element in the system of systems under observation.

§ 15. Our spirit is led to note here also in passing that in marked cases of hesitancy, and trial and error, and then trial and success, the final adjustment of the "neurergic pattern," which results in accommodation to new conditions, must often be due to some unobservable influence given from within the mass of the system of systems: for often in such cases he is not only unable to discover, but is even unable to imagine, any change in the conditions of environmental stimulation to account for the break down of the hesitancy and the establishment of the new trend of activity.

II.

§ 16. We have passed in review, in the sections preceding this, merely such of the observations of our spirit as serve our purpose. But it will be seen that throughout the investigations thus described he has held a position quite appropriate to the scientific biologist. For it is to be noted that he has reached his conclusions without any thought of the existence of consciousness in connexion with the activities examined.

We may now assume that he suddenly, and for the first time, discovers the startling fact that his own mental states are in some way related to a human body;—that certain peculiar

modifications of his consciousness are in some manner, and in some measure, coincident with the occurrence of certain stimulations reaching this human body, or with its reactions upon its environment. How this knowledge would be borne in upon him we need not stop to inquire, but we may assume that the coincidences thus noted are so numerous that he becomes convinced that his mind has a body, if we may suppose him to speak in the language we are accustomed to use.

We may suppose also that for the moment he makes no deductions from the facts before him in relation to the presence of consciousness in connexion with the activities of other men or animals, but concerns himself merely with the facts just noted, which are of extraordinary interest to him, and which he still views merely as phenomena of his consciousness. He takes up thus, quite naturally under the conditions, the rôle of the introspective psychologist, as we say, and without such difficulty as we poor mortals find in assuming this mental attitude. For when we turn to introspection we must limit our thought quite unnaturally: we find ourselves handicapped by the fact that since early childhood we have been constantly interpreting the activities of other men altogether, and of animals more or less completely, in terms of our own conscious experience; and we find it difficult therefore to consider our mental life as having any meaning apart from this interpretation.

But our spirit is troubled in no such way. He must be supposed to have realised always that the objects he has been studying are modifications of his conscious experience; or, to put it in another way, he cannot be supposed to have had any notion whatever, up to this moment, that they could be aught else than such modifications of his consciousness.

Such is the attitude of mind which the introspectionist strives to attain;—and it is, as we have said, an attitude quite natural to our spirit before he has noted the probability that other animals, and other men in particular, are conscious as well as he. Let us assume therefore that for a time he maintains this ignorance of other consciousnesses than his own, and let us attempt to picture the probable course of his thought under such conditions.

He would at the very start be likely to inquire as to the real meaning of this fact which he describes by saying that he finds his mind has a body;—to ask what he is really thinking when he says that the activities of this special human body which has come to interest him have some peculiar relation to his consciousness.

§ 17. "This human body," we hear him say, "which seems to be related in some intimate way to my consciousness is in the first place only one particular example of the increments (or perhaps he calls them presentations) which are constantly appearing in my consciousness in attention. It is, beyond that, of all such increments but one of a special class which I am accustomed to call objects. And of all objects this human body is a particular one observed in connexion with that special object, the world, which I have been studying. All of these observations of mine concerning these objects in the world have been special forms of my conscious experience:—special forms of what I describe as types of reflexion."

"In cases of reflexion I always note an increment" (or as we have seen he may chance to call it a presentation) "to a something else of consciousness. The implications of this observation of duality I shall at present pass over; I choose for the time to concentrate my attention upon these increments or presentations."

"All of these increments, I note, possess certain qualities which are in some measure noticeable in them: they must one and all have, for instance, some measure of intensity, and some measure of realness, to go no further."

"But beyond these general qualities, as I shall call them, I note also that many of these increments or presentations seem to display special qualities which are not common to all: in other words there are certain qualities which are observable in some but not in all of these increments. Some of these special qualities appear to be of more general occurrence than others. Among these special qualities which belong to a great mass of increments or presentations, and yet not to all, I note one which I choose to call the spatial quality. This is the quality which leads me under certain conditions to describe those presentations in which it appears 'as objects in the outer world'. Not pausing to consider this fact further, nor to analyse the experience it involves, I shall keep my attention for the time being upon the nature of this spatial experience."

"If I do so I note, as I have said, that a vast mass of these increments or presentations in my consciousness have this spatial quality, *i.e.* are 'objects in the outer world'. But some increments clearly have not this quality, that is some of them are non-spatial: such for instance are my ordinary thoughts, and emotions, and my pleasure-pain experiences. Now this object which I call my body is a special one of these spatial presentations, it is a special 'object in the outer

world'; and the activity of the nerve systems to which I have been giving so much attention, and which I see must belong to this body of mine, is also a special 'object in the outer world,' *i.e.* it is also a special spatial increment or presentation in my consciousness. It is this 'activity in my body's nervous system,'—this special *spatial* presentation or increment,—that I perceive to be in some measure and in some manner co-ordinate with modifications of my *non-spatial* presentative or incremental field of conscious experience."

"Let me bring out clearly by an example," we hear him say, "the facts which attract my attention to this relation. I have a certain spatial presentative experience of an 'object in the outer world' which I call a sharp-pointed pin; and this is presented as approaching what is another 'object in the outer world' held in the same presentation, and which latter I call the finger of this human body. When in this complex presentation the pin touches this finger I experience not only the complex spatial presentation of the two objects in contact, but also what I may speak of as a streak upon the surface of the stream of consciousness, and which I call a painful pricking sensation; and this is a non-spatial presentation, it is not an 'object in the outer world'."

"I observe so many striking facts of this kind, and the evidences of the relation thus suggested are so many, that I am led to assume for the moment an hypothesis which I shall call 'parallelism' and which I shall presently try to state to myself with clearness."

"For the present, at least, I shall not consider the fundamental nature of the relation just spoken of at all; it will suffice me to ask whether it is true that this parallelism exists; for if it does exist I imagine I may possibly gain some interesting knowledge concerning the nature of consciousness itself by considering the facts suggested by such an hypothesis. It is clear that the pointed pin touching my hand involves the stimulation to activity of certain nerves in the hand, and this spatial presentation which I call 'action of nerve' is relatively easy to investigate in certain directions in the field of attention, while my non-spatial presentations and their relations are exceedingly difficult to investigate. If I find that I can establish any relation of coincidence between my non-spatial presentative experiences and these spatial objects which I call 'actions of nerve,' I may well hope to obtain some help in my study of the nature of the processes in non-spatial experience by examining the laws of nerve action."

§ 18. "I may state this hypothesis of parallelism," we hear him say, "in the following form. If I think at all of the relation between the action of nerve in my body and my non-spatial presentations I cannot, under this hypothesis, assume the occurrence of a non-spatial modification of presentation without also assuming the existence of a coincident 'action of nerve' in my body."

"I perceive at once that logically I should expect to be able to assert the reverse of this proposition, *i.e.* I ought also to contend that I cannot assume any action of nerve in my body without assuming also a coincident modification of my non-spatial presentative experience. This second hypothesis however does not at first sight appear to be so thoroughly corroborated by the evidence at hand, and I shall therefore waive its consideration for the present and consider only the first one stated."[1]

§ 19. Having described the thought of our spirit thus far in terms of his own introspection let us for convenience in what follows indicate the probable course of his consideration in our own language.

Having assumed this hypothesis, our introspective psychologist, for such he has now become, would without doubt at the start examine the non-spatial field of presentation to see whether any of the characteristics of the actions of nerve which he has observed in his studies are also found in his experience of non-spatial presentations.

His thought naturally at once recurs to the unity of process in nerve action which has been impressed upon him during his earlier studies. But when he looks at the non-spatial order of presentational experience he fails at the first glance to see any indication of a corresponding unity of process in consciousness; for he finds there increments which appear to be of the most diverse form, *e.g.* Sensations, Instinct-feelings and Emotions, Desires, Impulses and Conative states in general, and Precepts and Concepts which appear in the flow of thought.

[1] I agree most fully with the main drift of Dr. James Ward's powerful arraignment of the assumptions involved in the statements made by *the majority* of those who uphold the doctrine of parallelism, as we find it in his *Naturalism and Agnosticism*. Nevertheless I cannot feel that he has done full justice to many who use the hypothesis quite legimately for working purposes. Nor does his argument seem to me to touch the theory as above formulated. Unfortunately he leaves in the mind of the reader the impression that in his opinion no form of this hypothesis has any value whatever: a view which of course he could not successfully maintain, and which he evidently cannot mean to imply.

But presently he recalls his previous observation that man's nervous system is really a complex system of neural systems; and he considers that if his hypothesis of parallelism is correct his consciousness must in like manner be a complex system of psychic systems. And when he asks whether such a supposition throws any light upon his difficulty, he at once sees that an explanation of the apparent diversities in conscious process which he notes may be due to the fact that when he observes these apparent divergencies he is considering different portions of the great pulse of activity of the psychic system of systems in which the unity of process should be expected to appear, and that in such partial observation he may be deceived by contrasts which for one reason or another are given in such a view.

When he turns to the more careful study of consciousness, as a system of psychic systems as a whole, he at once perceives that he observes in his conscious experience, within the total system of psychic systems, complex minor psychic systems A, which relate to the reception of stimuli from his environment; and also other complex minor psychic systems Γ, which relate to his expressive reaction upon the environment; and also certain vastly more complex, but for all that minor psychic systems B, relating to the co-ordination of systems α and Γ.

The A systems give him his sensations; grading off into the B systems in which he notes perceptions, conceptions, thoughts, and reasoning; and these again grading off into the Γ systems in which he notes the conative states, the emotions and instinct-feelings in general, the desires, impulses, and finally his voluntary acts.

Now evidently these psychic A, B and Γ minor systems correspond exactly with the minor neural systems α, β and γ which he observed when examining the nature of neural activities (see § 8 above). He is led therefore to look further, and in doing so finds further correspondences of great interest. For he notes that at times psychic systems A and at times B and at other times Γ are centres of conscious activity; and that in each case there is an alteration of the nature of the presentative experience taken as a whole, which he chooses to picture as a "noëtic pattern," corresponding with the "neurergic pattern" which he viewed in his study of neural activity (see § 8 above). He notes also that when any one of these minor psychic systems becomes a centre of presentative activity it alters the nature of the "noëtic pattern" of the moment, in a manner quite comparable with the alteration of what he has called the "neurergic pattern" in the

whole system of neural systems, occasioned by an emphatic activity in any of the minor neural systems α, β or γ.

He sees therefore that notwithstanding these special emphases he must, in any broad view, consider the "noëtic pattern" as a whole pulse of psychic activity, and these especially vivid presentations merely as partial psychic activities which for the moment are especially emphatic. And he thus sees how what may really be a unity of psychic process, in a complex psychic system of systems, may appear at the first glance to be a diversity of process; this apparent diversity being occasioned by the pre-eminent activity, for the time being, of some such minor psychic systems as A or B or Γ.

§ 20. Taking another step our spirit observes a further correspondence between the activities in the neural and the psychic systems: for he finds that the Γ process in emotion, and in conative actions in general, in affecting the "noëtic pattern" of the moment appears to be most powerful not in itself but rather through a subsidiary A-like process of sensation closely related to the Γ process: even as he found the activity of the γ minor neural system producing its effective modification of the "neurergic pattern" of the moment through the activity of a subsidiary α-like minor system closely related to the γ minor system (see end of § 8 above).[1]

In the light of his studies of neural action however he sees that the above observations cannot blind him to the fact that in viewing the activity of the complex psychic system of systems he must consider that the "noëtic pattern" taken as a whole must at any moment be modified by all the psychic activities in all of the minor psychic systems, whether these be in A, or B, or Γ, or in the intermediaries between A and B, or between B and Γ, or in the subsidiary A-like systems which affect B in connexion with the activities in Γ.[2]

§ 21. If now our spirit considers from another point of view the pulse of psychic activity as a whole, he finds that

[1] The reader will of course recognise this observation as the foundation of the famous James-Lange "back stroke" theory of the emotions, and of various modern theories of the will.

[2] *Cf.* my definition of Emotion in my *Instinct and Reason*, p. 125. The view here maintained is of course in opposition to the one commonly held in our day, that (as Prof. Lloyd Morgan puts it, *op. cit.*, p. 100) "the data for consciousness are in all cases supplied through afferent channels".

in some very exceptional cases consciousness appears to be what he may describe as mere experience and naught else. In a vast majority of cases, however, consciousness in reflexion appears as a mass of undifferentiated psychic activity over against which stands an increment of a partial psychic activity of more or less simple form. And this he notes corresponds with the nature of the activity in the whole neural system of systems (see § 9 above).

This observation seems to throw a flood of light upon the nature of presentation itself, the examination of which he waived in his earlier study of this hypothesis. For he notes that the increment of activity in the neural system of systems corresponds with what appears in reflexion as the presentation to that part of consciousness which he conceives of as his Self; and observing that this Self is of consciousness, and yet is an undifferentiable psychic mass, if he may so

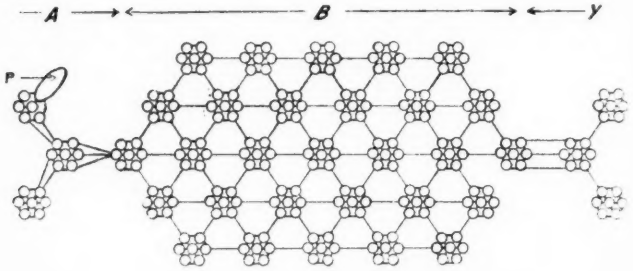

FIG. 1.

speak, he judges that this Self is nothing more or less than the sum total of undifferentiable psychic activities in the system of psychic systems, coincident with the mass of neural activities to which the partial neural increment accrues, and in contrast with which it appears to be emphatic The Self he concludes therefore can never appear in consciousness as an increment or presentation; and this, for the simple reason that it is itself always that mass of undifferentiable psychic activity, in the whole mass of the psychic system of systems, to which the presentation accrues as an increment.

The nature of the complex psychic system of systems A, B and Γ he represents to himself according to the diagram given in figure 1.

Here A represents the receptive minor psychic systems, Γ the reactive minor psychic systems, and B the minor psychic

systems concerned in the co-ordination of the A and Γ minor psychic systems.

The whole figure represents the conscious experience of a moment of sensational experience; P representing the sensational increment or presentation, and $[A-P]+B+\Gamma$ representing the Self.

Our spirit notes furthermore that as the mass of neural activities, although really variable in minor degrees, appears to be relatively permanent (see § 11 above); so the psychic coincident activities should appear; and he notes here a distinct corroboration of his view in the fact that the Self has this appearance of permanence when viewed in relation to the evidently variable nature of the increments to the Self.

§ 22. Our spirit sees also that if any semblance of the Self did appear as a presentation it would in that fact be no longer of the Self, but would be what he chooses to call an "empirical ego," and as such a true increment or presentation to the Self.

And here he notes that he discerns in consciousness just such presentations of an empirical ego; and in what he calls states of "self-consciousness" experiences this empirical ego to which a presentation is given,—to which an increment accrues. And he is reminded that here too he finds a correspondence with the activity of the neural system; for he has seen in his previous observations (see § 10) that the increment of neural activity in the total pulse of neural activity may be due to an emphatic activity in a whole minor system of systems: that the mass of these minor activities may be undifferentiable in form, and yet within them some partial activity may be so emphasised as to appear as an increment to the wide mass of the activities in this minor system of systems. He sees thus that in such cases both the minor system of systems, and the increment to this minor system of systems, will together form an increment, of another order, so to speak, to the mass of neural activity as a whole; and he thus sees a distinct correspondence with the case in consciousness where to the unpresentable Self accrues an increment, which increment itself appears as an empirical ego to which accrues an increment of a lower order.[1]

The nature of this experience of "self-consciousness," in which appears an empirical ego, and a presentation to the

[1] Cf. my "Consciousness, Self-Consciousness and the Self," MIND, N.S., No. 37.

empirical ego, he represents to himself according to the diagram given in figure 2.

The darker portions here represent the increment to the Self.

The Self is represented by $[B-(T+U+V+W+X+Y+Z)]+\Gamma$.

The increment to the Self is represented by $Q+R+S+T+U+V+W+X+Y+Z$.

This increment to the Self consists of the empirical ego, $[Q-P]+R+S+T+U+V+W+X+Y+Z$; and the increment to this empirical ego; which latter increment is represented by P.

§ 23. In the studies referred to in the last section our spirit has found his attention diverted from the question which he

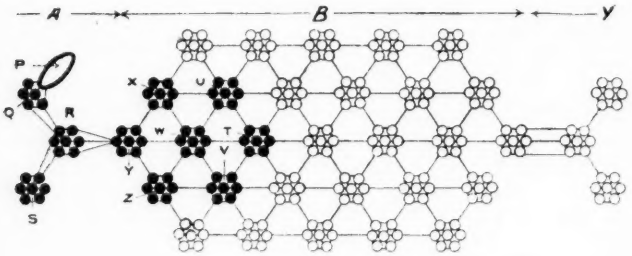

FIG. 2.

at first set himself to answer: *viz.*, whether there is a unity of process in consciousness, corresponding with the unity of process which he found so emphasised in the activities of animals. In recurring to this question he now recalls that he found marked distinctions in the realms of conscious experience which at first seemed to be altogether incompatible with such a notion, but he observes that his further study has tended to convince him that these distinctions are due to his having at first taken a view of parts of his psychic activities only, and not of the whole pulse of active consciousness.

He is tempted therefore to consider this question more in detail, and at the start asks whether this notion of the unity of conscious process, in coincidence with the unity of neural process, is compatible with the patent fact that some activities of his body as a whole do not seem to be coincident with any modifications of his consciousness whatever, although these apparently "unconscious" activities appear to

him to be just as important as others which are coincident with very distinct modifications of consciousness.

His studies in this direction at first tend to show that a special part, *viz.*, the brain, is alone the seat of the activities in his body which are the coincidents of modifications of his consciousness; for the mass of those activities in his body which are marked, and which nevertheless do not appear to be related to his consciousness, seem to be connected with minor neural systems which are more or less completely separated from the brain system. This view is strengthened when he notes that, as in the great neural system of systems the activity of certain minor neural systems may under certain conditions be temporarily "split off," as it were, from participation in the whole pulse of activities which determines the "neurergic pattern" of the moment, in the total neural system of systems; so he also finds that under certain conditions minor psychic systems, which he at first sight thinks ought to affect consciousness, seem to be in like manner "split off" from participation in the total pulse of psychic activity which determines for him the "noëtic pattern" of the moment of presentative experience.

Such a conclusion in relation to the brain does not however seem to him to be eminently satisfactory, for the simple reason that he finds many marked activities which seem to be very clearly connected with brain activities which also often fail to correspond with any discernible modifications of consciousness.

He finds himself wondering therefore whether here also he may not be erring in his conclusions as the result of over-looking certain modifications of consciousness which are relatively unemphatic: and looking back to the conclusions he has reached as to the nature of the Self he is led to ask whether these psychic activities which he fails to observe may not possibly have become absorbed in, may not have become part and parcel of, that undifferentiable psychic mass which he has come to identify with his Self.

§ 24. In this connexion our spirit finds himself turning back to consider again the hypothesis which he passed over in his observations recorded in § 18 regarding the hypothesis of parallelism; he asks whether it will not be possible to explain the facts which thus baffle him if he finds it true, as there suggested, that he cannot assume any action of nerve in his body without assuming also a coincident psychic modification.

The course of his thought in this direction we have not

space to follow: suffice it to note that he concludes in the end that there is much ground for upholding this hypothesis and that if it is valid it involves a further emphasis of that unity of process in consciousness of which he has observed so much evidence in his previous studies.

He is led to assume that there is some modification of psychic life in connexion with all action of nerve, and this he chooses to speak of as "mentality". He holds that with the activities in all nerve systems which are connected, there must always be coincident a system of mentalities which under certain conditions becomes what we men call a consciousness. Consciousness as experienced by man is under this view a vast system of psychic systems.

"These other individual men whom I see and the animals by which I am surrounded," he says, "have more or less complex systems, neural and psychic, which are entirely disconnected from mine and from each other. I myself," he continues, "am one of such separate animal and psychic individuals. So also in my body, which is that of an individual man, there are certain minor neural systems which are practically disconnected from the great system of neural systems which expresses itself in many ways, but pre-eminently in speech, and which has corresponding with its activity all the psychic processes which I usually speak of as my consciousness,—as my empirical ego and the presentations to that ego. These minor neural systems must be supposed to involve coincident minor systems of mentality, if not of consciousness; and as the other disconnected individual man indicated to me the existence of his consciousness by certain so-called expressive actions without directly affecting my consciousness, so these practically disconnected parts of my body express themselves in actions which we call 'reflexes,' and which we are wont to think of as unconscious. At times nevertheless these practically disconnected systems do affect appreciably the main system of systems; and furthermore at times, as we have seen, certain minor systems within the great system of systems are for one reason or other 'split off' from the main systems of systems, and in such cases the activities in these minor neural systems which ordinarily affect the pulse of the whole neural system do so no longer, while correspondingly their psychic coincidents which usually affect what I call my consciousness affect it no longer."

"I thus see how it is possible to maintain the unity of the process in consciousness which seemed at first sight to be scarcely compatible with the evident existence of activities in parts of my nervous system which appear not to affect

consciousness at all. As for the vast mass of those activities in the thoroughly connected diverse parts of the neural system of systems whose assumed psychic coincidents at first sight do not appear to modify consciousness, I have already come to see that they probably do affect consciousness, but not sufficiently to induce presentations in reflexion: *i.e.* that they form part and parcel of that vast undifferentiable psychic mass which I call my Self, to which in reflexion the more emphatically active psychic elements appear as increments."[1]

III.

§ 25. Apart from the aid given to both neurologists and psychologists, in the formulation of their general conceptions, it appears to me that in assuming thus in turn the attitudes of the ideal biologist, and of the ideal introspective psychologist, much light is thrown upon a number of problems familiar to both sets of investigators, and in closing this article I shall ask the reader to consider briefly a few of the questions of current interest to which these studies seem to apply with especial force.

It has appeared clear to us that we are compelled to assume a unity of process in all of animal activities as well as in all of the complex phases of our conscious life: and it is interesting to consider how far it is possible under this assumption to maintain certain distinctions which are commonly made in our day.

Let us begin with the generally accepted distinction between reflex and instinctive activities. Mr. C. Lloyd Morgan who realises as fully as any living biological writer the "besetting sin" referred to in the opening paragraph of this article, tells us in his latest work[2] that "whereas a reflex act is a restricted and localised response, involving a particular organ or a definite group of muscles, and is initiated by a more or less specialised external stimulus, instinctive behaviour is a response of the animal as a whole, and involves the co-operation of several organs and of many groups of muscles".

It may be that biologists will follow Mr. Morgan in this use of terms in every-day anecdotal descriptions of animal behaviour; but I submit that, if we look upon the nervous system of man as a complex system of systems, it appears at once that the distinction is not a fundamental one; and that it should in no manner blind us to the fact that instincts as objectively viewed are in Mr. Spencer's phrase nothing

[1] *Cf.* my *Instinct and Reason*, pp. 19-67.

[2] *Animal Behaviour*, p. 70.

more than "compound reflex actions": and in fact it is but fair to say that Mr. Morgan himself practically admits as much in saying, as he does, "that there are cases in which the distinction can hardly be maintained".[1]

I cannot give space[2] in this article to any fuller discussion of this special distinction than is implied in what I have said above in §§ 7 and 23; but it surely is important to fix the above conclusion in our minds, for it clearly has an important bearing upon the matters to be considered below in conjunction with the fact that instinctive activities are acknowledged to involve often very distinct modifications of consciousness, while reflex actions are very generally supposed not to do so.

§ 26. If now we consider the difference between Habit and Instinct, which Prof. Morgan has made so prominent in his valuable works, we see reason here also to hold that the distinction is not a fundamental one. We may "define instinctive behaviour," says Prof. Morgan, "as comprising those complex groups of co-ordinated acts which are, on their first occurrence, independent of experience".[3] On the other hand "behaviour which has become mechanised in the course of individual life"[4] he described as due to habit. Now I do not question the interest connected with the observation of the changes in instinctive activities occasioned by experience during life; in fact I feel that Prof. Morgan has rendered very great service in differentiating what he would call the instincts from what he would call the habits, for this purpose. But on the other hand I hold that we must not let this interesting practical distinction lead us to assume that the difference referred to is of a fundamental character, or that it involves a diversity of process in the two sets of activities.

Habits, as I have elsewhere said,[5] may justly be called

[1] *Op. cit.*, p. 71.

[2] I may note that Mr. Morgan's remark (*op. cit.*, p. 70) that "reflex acts are local responses of the congenital type due to specialised stimuli, while instinctive activities are matters of more general behaviour usually involving a larger measure of central co-ordination" seems to me to involve less grounds for the distinction noted than the definition quoted in the body of this article.

[3] *Op. cit.*, p. 71. [4] *Op. cit.*, p. 66.

[5] *Instinct and Reason*, p. 70. I am glad to have this opportunity to refer to Prof. Morgan's appreciated criticism of my definition of "instinct" as printed in my *Instinct and Reason*. My definition to which he refers on p. 68 of his *Animal Behavior* is found in what is evidently but a preliminary chapter; and my conception of the nature of instinct as above outlined is fully developed only in the course of a number of

pseudo-instincts; and Wundt seems to me nearer to the truth than Prof. Morgan will allow,[1] in calling habits "acquired instincts". For in order to make the distinction fundamental we are compelled in the first place to assume, as Prof. Morgan constantly does, that there is no such thing as pre-natal experience,—no modification of inherited trends of activity by the influences which reach the unborn animal before it breaks away from the body of the mother, or from the enclosure in which it is contained at birth. Such an assumption is of course altogether unwarranted, and it seems to me much more logical to assume, with our "spirit" of the earlier sections, that the modification of inherited trends of action, which as it appears in the higher animals is commonly ascribed to "learning by experience," is a general characteristic of all living matter; and that no simple bit, or complex mass, of living matter can fail to be modified to some degree by each of its reactions,—by each item of its experience.

In treating this distinction as fundamental we also overlook the fact that every animal in which we can observe the differences here considered is a complex system of systems, and that the modification of any inherited trend of action which we choose to study must itself be due to the emphasis of a special partial activity within the whole mass of the activity observed (see § 14 above); and that this partial activity is possible only because the part in which it appears has inherited with its structure capacities to act in certain definite ways; this being true whether the structure has, or has not, been modified by experiences previous to those noted at any special moment.

chapters which follow. Prof. Morgan says: "In saying that the biological end is *the* objective mark of an instinct, he seems to be in error. Because in the first place there are other 'objective marks,' and because in the second place this objective mark is not restricted to instinctive behaviour." The use of the word "the" which Prof. Morgan places in italics in this quotation is perhaps careless, but the word was not italicised in my book (*cf. Instinct and Reason*, p. 91) and was therefore less important in the context than it appears as Prof. Morgan quotes it. It is true that other behaviour than that which he calls instinctive has this "objective mark," and the same is true of the co-ordinate subjective mark referred to by him in objection in the paragraph following the one above quoted. But this is not indicative of a failure of my definition if one keeps in view the fact, that I am concerned to maintain, that all intelligent acts are fundamentally of the same nature as instinctive acts. I acknowledge that these definitions of mine might be more carefully stated, and regret that I am not likely to have an opportunity to profit by Prof. Morgan's criticisms in a second edition of my book: but I cannot think that they are misleading to one who discovers the meaning of my main contention.

[1] *Op. cit.*, p. 65.

It is surely a significant fact, and one upholding our contention, that apart from the disturbances of consciousness connected with marked modifications of what we call our instinctive activities, the modifications of consciousness in connexion with our so-called instinctive, or our so-called habitual, activities are not felt to be different in kind, however much they may appear to vary in degree.

§ 27. We may now turn for a moment, in closing, to the consideration of a distinction which is well worth discussing because it is made much of in current writings. I refer to the distinction between instinctive acts and those governed by intelligence: and here again I shall quote from Prof. Morgan's latest work, for the reason that the writer is much alive to the logical dangers which beset the path of the comparative psychologist.

"Intelligence and instinct," he tells us, "are in large degree independent, though there is continual interaction between them."[1] "Whereas instinctive behaviour is prior to individual experience, intelligent behaviour is the outcome and product of such experience."[2] He acknowledges of course that instinctive reactions often do affect consciousness in a somewhat complex way; and is compelled to agree that possibly reflex actions may have the same characteristics[3] but he feels warranted in assuming that this is mere "sentience" and "has no power of guidance over animal behaviour".[4]

It is evident, indeed, that, if our argument above is valid, the distinction between instinctive acts, and intelligent acts, cannot be maintained unless with Prof. Morgan we assume at some point, and in some manner, "an 'effective consciousness' to enter in the scene and play its part in the guidance of behaviour".[5]

Now it is patent that this notion presents many practical difficulties, for we find that it all too often leads its advocates to assume the attitude of the special pleader. On the one hand they are led to make strained assumptions of lack of intelligence in animals in connexion with complex actions which correspond closely with those in men which we know to be distinctly intelligent;[6] and on the other hand to assume

[1] *Op. cit.*, p. 173. [2] *Op. cit.*, p. 118; *cf.* also p. 120 top.
[3] *Op. cit.*, p. 102. [4] *Op. cit.*, p. 331.
[5] *Op. cit.*, p. 61; *cf.* his explanation on p. 242 which does not however break the force of his many statements as to the appearance of effective consciousness at some step in the course of development.
[6] *Cf.*, Lloyd Morgan, *op. cit.*, p. 125, also p. 210.

that animal bodies do not profit by experience merely because we cannot observe the results of such experience.[1] It leads them also to overemphasise the stupidity of animals who refuse to grasp what seem to us evident advantages,[2] forgetful that few of the higher animals are more stupid in this particular than men often are;—as for example the Chinese coolies who, we are told, still climb with their heavy loads up and down the steps of a certain high bridge which spans the dry bed of a stream which has been diverted from its course for centuries, rather than take a level path aside from the ancient roadway.

But the principal objection to the view that consciousness at times "enters in" to guide behaviour, and at times does not, lies in its unacknowledged denial of the unity of process in consciousness.

I shall not attempt here to inquire as to the real meaning of this phrase "effective consciousness," nor am I concerned to oppose the notion that there is such a thing; in fact I am inclined myself to assert a full and complete conviction that effective consciousness exists, if I am allowed to place my own interpretation upon the phrase.

But I hold that if we claim its existence at all in connexion with animal activities the evidence before us necessarily leads us to hold that in some measure, and in some degree, it must exist in connexion with all reactions of living matter, inasmuch as under my view all such reactions involve more or less important modifications of antecedent forms of reaction, and of the structure without which these reactions would be impossible: and I hold that if the marks of this effective consciousness are not noticeable by us it is no proof that it does not exist; rather is it a proof of the limitation of our powers of observation. This becomes clear I think if we consider our introspective experience in conjunction with what little we know of the coincident neural processes.

§ 28. We have already made note of the evidence that adaptation through experience may be conceived to be due to the emphasis of the activity in some more or less complex minor system which is part of a larger system (see § 14 above). This is evidently a process which holds throughout all systems of neural systems whether they are simple or complex.

The activity thus emphasised is possible because the

[1] *Op. cit.*, pp. 10. 11, 13, 29.
[2] *Op. cit.*, p. 218.

animal has inherited from ancestral forms capacities to react in certain ways to certain stimuli. Even where these capacities have been modified previous to the moment of our observation we see that this modification must itself have been dependent upon a previous emphasis of the reaction of certain elements of a partial system within a greater system.

This emphasis involves, under this hypothesis, the production of a new form in what I have called the "neurergic pattern" of the moment, which leads to a modification of reaction; and this modification of the "neurergic pattern" of the moment results in a more or less fundamental modification of all succeeding "neurergic patterns," and of all succeeding corresponding reactions.

If now we turn to introspection and examine the most prominent cases in which consciousness appear to us to be "effective" in producing modifications of typical forms of reaction, and adaptation to new conditions,—if in other words we examine our modes of reasoning,—we find that in like manner the process appears as the emphasis of some element in a complex psychic presentation;[1] which emphasis involves the production of a new form in the "noëtic pattern" of the moment; and we note also that this modification of the "noëtic pattern" of the moment results in a more or less fundamental modification of all succeeding "noëtic patterns". If, as we have seen, the neural process in relation to modifications is one which holds throughout all systems of neural systems, then clearly the psychic process in relation to modification must in all probability also hold throughout all systems of psychic systems.

If now we turn to that most interesting phenomenon of our conscious experiences in which adaptation seems implicated, *viz.*, the will act, which appears to dissolve our uncertainties, to break down our hesitancies, we find further evidence favourable to our view; for we recall that in our earlier studies of animal life (see § 15 above) we saw that in cases of persistent hesitancy, of persistent opposition between incompatible tendencies to reaction, the emphasis which finally breaks down the opposition must often come from within the undifferentiable mass of the activities in the system of systems. We at once see therefore how it happens that in reflective consciousness it is from the Self (which we hold to be identical with the undifferentiable mass of psychic activities) that the influence appears to arise which involves the will act, which resolves the doubt; which resolution

[1] *Cf.* my *Instinct and Reason*, p. 458 ff.

carries with it the overthrow of hesitancy and the visible result coincident with this will act.

Having observed this process in these highly complex forms let us consider certain cases which are less emphatically presented to our minds, but in which, in the light of what we have just remarked, appear indications of the same process.

At first sight the distinctions between the apparent immediacy of certain actions, and the hesitancy preceding others (*cf.* §§ 12 and 13 above) appear to present difficulty, especially as we note modifications of consciousness in the latter case that do not present themselves in the former. But we at once see that these distinctions are without doubt apparent rather than real; that they are due in the case of hesitancy to the complexity of the psychic and neural systems involved; and to the fact that this complexity gives rise to opposed tendencies to reaction on the one hand, and to opposed presentations in consciousness on the other: in other words that they tend to result in the formation of incompatible "neurergic" and "noëtic patterns".

We see also that we are able to explain in the same terms those complex cases of trial and error, and then of trial and success, and after that of action only in the direction of success. For we see that where the tendency to the formation of incompatible "neurergic" and "noëtic patterns" is overthrown in a way that leads to no permanent reformation of these patterns, a recurrence of the "typical" reaction may readily occur: but that when another overthrow occurs which does lead to a permanent reformation of the patterns, a recurrence of the typical reaction will not be likely to occur and a persistent variation will be noted.

I can spare space here merely to make mention of the corroboration of this view obtained when we examine the states anterior to the act determined, as we say by reason, in the reasoning process;[1] and of those anterior to the will-

[1] *Cf.* my *Instinct and Reason*, p. 459 ff. Note in this connexion Binet's *Psychology of Reasoning* (Open Court Co.) in which he argues that perception and reasoning are due to one and the same process. "Perception," he concludes (p. 88), "is comparable to the conclusion of logical reasoning." "Reasoning (p. 156) is the establishment of an association between two states of consciousness, by means of an intermediate state of consciousness which resembles the first state, which is associated with the second, and which, by fixing itself with the first, associates it with the second." P. 178: "All forms of mental activity are reducible to a single one,—reasoning. The psychical life is a continual conclusion. 'The Mind,' as Wundt says, 'is a thing which reasons.'" *Cf.* also in this connexion the article by Mr. Alexander F. Shand on "The Nature of Consciousness," MIND, April, 1891, especially pp. 208 and 221.

act in desire and impulse.[1] Nor need I do more than refer the reader to the supposed observations of our "spirit" in §§ 23 and 24 above to show how it is possible to explain in terms compatible with this theory the fact that the process of consciousness coincident with minor modifications by experience are not brought into the field of attention in moments of reflexion.

As I have argued in my *Instinct and Reason*,[2] it appears to me that, if we take a broad view, no fundamental distinction can be maintained to exist between so-called intelligent, or reasoned, activities on the one hand, and instinctive activities on the other; instincts themselves appearing as modes of that simplest of all phenomena of activity—the reaction of a living cell to the stimulus from its environment.

Reason must thus finally be stated in terms of the modifications of consciousness coincident with instinctive reactions: and the fact that only certain limited parts of the vast field of consciousness can be held in attention in moments of reflexion suffices to explain the apparent distinctions which we have thus briefly considered, without lessening in any degree our confident belief in the unity of process in consciousness.

[1] *Cf.* my *Instinct and Reason*, p. 448 ff.

[2] *Cf.* especially the summary in chap. xix.

III.—HEGEL'S TREATMENT OF THE CATEGORIES OF QUALITY.

By J. Ellis McTaggart.

In this paper, as in my previous papers on the Categories of the Subjective Notion (Mind, April and July, 1897), the Objective Notion (Mind, January, 1899), and the Idea (Mind, April, 1900), I shall consider one of the great secondary divisions—nine in all—into which the Logic is divided. I shall follow the exposition in the Greater Logic, from which, in this division, the Smaller Logic does not materially differ, except in being less minutely subdivided.

Quality (*Qualität*) is the first division of the Doctrine of Being, and consequently of the whole Logic. It is divided as follows :—

I.—BEING (SEIN).

A.—Being (Sein).

B.—Nothing (Nichts).

C.—Becoming (Werden).

II.—BEING DETERMINATE (DASEIN).

A.—Being Determinate as Such (Dasein als Solches).

(*a*) *Being Determinate in General* (*Dasein überhaupt*).

(*b*) *Quality* (*Qualität*).

(*c*) *Something* (*Etwas*).

B.—Finitude (Die Endlichkeit).

(*a*) *Something and an Other* (*Etwas und ein Anderes*).

(*b*) *Determination, Modification and Limit* (*Bestimmung, Beschaffenheit und Grenze*).

(*c*) *Finitude* (*Die Endlichkeit*).

C.—INFINITY (DIE UNENDLICHKEIT).

(*a*) *Infinity in general* (*Die Unendlichkeit überhaupt*).
(*b*) *Reciprocal Determination of the Finite and Infinite* (*Wechselbestimmung des Endlichen und Unendlichen*).
(*c*) *Affirmative Infinity* (*Die wahre Unendlichkeit*).

III.—BEING-FOR-SELF (DAS FÜRSICHSEIN).

A.—BEING-FOR-SELF AS SUCH (DAS FÜRSICHSEIN ALS SOLCHES).

(*a*) *Being Determinate and Being-for-Self* (*Dasein und Fürsichsein*).
(*b*) *Being-for-One* (*Sein für Eines*).
(*c*) *One* (*Eins*).

B.—THE ONE AND THE MANY (EINES UND VIELES).

(*a*) *The One in Itself* (*Das Eins an ihm selbst*).
(*b*) *The One and the Void* (*Das Eins und das Leere*).
(*c*) *Many Ones* (*Viele Eins*).

C.—REPULSION AND ATTRACTION (REPULSION UND ATTRAKTION).

(*a*) *Exclusion of the One* (*Ausschliessen des Eins*).
(*b*) *The One One of Attraction* (*Das Eine Eins der Attraktion*).
(*c*) *The Relation of Repulsion and Attraction* (*Die Beziehung der Repulsion und Attraktion*).

In Hegel's use of the word Being there is an ambiguity which may be dangerous unless carefully noticed. He uses it, as will be seen (i.) for one of the three primary divisions into which the whole Logic is divided; (ii.) for one of the three divisions of the third order into which Quality is divided; and (iii.) for one of the three divisions of the fourth order into which Being in the second sense is divided. In the same way Quality, besides being used for the division of the second order which forms the subject of this paper, is also used for a division of the fifth order, which falls within Being Determinate as Such.

I.—BEING.

A.—Being.

I do not propose to discuss here the validity of the category of Pure Being as the commencement of the Logic. This is rather a general question affecting the whole nature of the process than a detail of the earlier stages, and I have already discussed it in my *Studies in the Hegelian Dialectic* (*cf.* sections 17, 18 and 79). If, then, we begin with the category of Being, what follows?

Pure Being, says Hegel (Greater Logic, 78; Encyclopædia, 87*) has no determination of any sort. Any determination would give it some particular nature, as against some other particular nature—would make it X rather than not-X. It has therefore no determination whatever. But to be completely free of any determination is just what we mean by Nothing. Accordingly, when we predicate Being as an adequate expression of reality, we find that in doing so we are also predicating Nothing as an adequate expression of reality. And thus we pass over to the second category.

B.—Nothing.

This transition, which has been the object of so much wit, and of so many indignant denials, is really a very plain and simple matter. Wit and indignation both depend, as Hegel remarks (G. L., 82; Enc., 88) on the mistaken view that the Logic asserts the identity of a concrete object which has a certain quality with another concrete object which has not that quality—of a white table with a black table, or of a table and courage. This is a mere parody of Hegel's meaning. Whiteness is not Pure Being. When we speak of a thing as white, we apply to it many categories besides Pure Being—Being Determinate, for example. Thus the fact that the presence of whiteness is not equivalent to its absence is quite consistent with the identity of Pure Being and Nothing.

When the dialectic process moves from an idea to its antithesis, that antithesis is never the mere logical contradictory of the first, but is some new idea which stands to the first in the relation of a contrary. No reconciling synthesis

* My references in this paper to the Greater Logic are to the *pages* of vol. iii. of Hegel's *Works* (ed. 1833); my references to the Encyclopædia are to *sections*.

could possibly spring from two contradictory ideas—that is, from the simple affirmation and denial of the same idea. In most parts of the dialectic, the relation is too clear to be doubted. But at first sight it might be supposed that Nothing was the contradictory of Being. This, however, is not the case. Being here means Pure Being, and the contradictory of this is Not-Pure-Being. This is a much wider term than Nothing, for it includes both Nothing and all determinate being. Nothing is the direct opposite of Pure Being and not its mere denial.

Hegel says, indeed (G. L., 79), that we could as well say Not-being (*Nichtsein*) as Nothing. But it is clear that he does not take the affirmation of Not-being to be identical with the denial of Pure Being.

If the identity of Being and Nothing were all that could be said about them, the dialectic process would stop with its second term. There would be no contradiction, and therefore no ground for a further advance. But this is not the whole truth (G. L., 89; Enc., 88). For the two terms, to begin with, meant different things. By Being was intended a pure positive—reality without unreality. By Nothing was intended a pure negative—unreality without reality. If each of these is now found to be equivalent to the other, a contradiction has arisen. Two terms which were defined as incompatible have become equivalent. Nor have we got rid of the original meaning. For it is that same quality which made the completeness of their opposition which determines their equivalence. A reconciliation must be found for this contradiction, and Hegel finds it in

C.—Becoming.

The reconciliation which this category affords appears to consist in the recognition of the intrinsic connexion of Being and Nothing (G. L., 79; Enc., 88). When we had these two as separate categories, each of them asserted itself to be an independent and stable expression of the nature of reality. By the affirmation of either its identity with the other was denied, and when it was found, nevertheless, to be the same as the other, there was a contradiction. But Becoming, according to Hegel, while it recognises Being and Nothing, recognises them only as united, and not as claiming to be independent of one another. It recognises them, for Becoming is always the passage of Being into Nothing, or of Nothing into Being. But, since they only exist in Becoming in so far as they are passing away into their contraries, they

are only affirmed as connected, not as separate, and therefore there is no longer any opposition between their connexion and their separation.

But, Hegel continues, this is not the end of the matter. Being and Nothing only exist in Becoming as disappearing moments. But Becoming only exists in so far as they are separate, for if they are not separate, how can they pass into one another? As they vanish, therefore, Becoming ceases to be Becoming, and collapses into a state of rest which Hegel calls Being Determinate (G. L., 109; Enc., 89).

I confess that I regret the choice of Becoming, as a name for this category. What Hegel meant seems to me to be quite valid. But the name of the category suggests something else which is not valid at all.

All that Hegel means by this category is, as I have maintained above, that Being is dependent on Nothing in order to enable it to be Being, and that Nothing is dependent on Being in order to enable it to be Nothing. In other words, a category of Being without Nothing, or of Nothing without Being, is inadequate and leads to contradictions which prove its falsity. The only truth of the two is a category which expresses the relation of the two. And this removes the contradiction. For there is no contradiction in the union of Being and Nothing. The contradiction was between their union and the previous assertion of the unsynthesised categories as independent and adequate expressions of reality.

Hegel seems to have thought it desirable to name the new category after a concrete fact. But this use of the names of concrete facts to designate abstract categories is always dangerous. It is, as I have maintained in previous papers, the cause of the confusion to be found in Hegel's treatment of the categories of Chemism and Life. In the present case, the state of becoming involves, no doubt, the union of Being and Nothing, as everything must, except abstract Being and Nothing. But becoming involves a great deal more—a great deal which Hegel had not yet deduced, and had no right to include in this category. I do not believe that he meant to include it, but his language almost inevitably gives a false impression.

When we speak of Becoming we naturally think of a process of change. For the most striking characteristic of the concrete state of becoming is that it is a change from something to something else. Now Hegel's category of Becoming cannot be intended to include the idea of change.

Change involves the existence of some permanent element in what changes—an element which itself does not change.

For, if there were nothing common to the two states, there would be no reason to say that the one had changed into the other. Thus, in order that anything should be capable of change it must be analysable into two elements, one of which changes, while the other does not. This is impossible under the categories of Quality. Under them each thing—if indeed the word thing can properly be used of what is so elementary—is just one simple undifferentiated quality. Either it is itself—and then it is completely the same—or its complete sameness vanishes, and then it vanishes with it, since its undifferentiated nature admits no partial identity of content. Its absolute shallowness—if the metaphor is permissible—admits of no distinction between a changing and an unchanging layer of reality.

This was recognised by Hegel, who says that it is the characteristic of Quantity that in it, for the first time, a thing can change, and yet remain the same (G. L., 211; Enc., 99). He cannot, therefore, have considered his category of Becoming as including change proper.

But, it may be objected, although Hegel's category of Becoming is incompatible with fully developed change, may it not be compatible with a more rudimentary form of change? Is it not possible that, even among the categories of Quality, a place may be found for a category which involves, not the change of A into B, but the disappearance of A and the appearance of B instead of it? To this we may reply, in the first place, that if such replacement of A by B was carefully analysed, it would be found to involve the presence of some element which persisted unchanged in connexion first with A and then with B. The case would then resolve itself into an example of change proper. But it is not necessary to go into this question. For it is clear that, if such a replacement could exist without being a change of A into B, then A would necessarily be quite disconnected with B. But in Hegel's category of Becoming the whole point lies in the intrinsic and essential connexion of Being and Nothing.

The category, then, cannot be taken as one of change, if it is to be consistent with the rest of Hegel's system. And when we look at the actual transition to this category (G. L., 79; Enc., 88) we see, as I said above, that the essence of the new category lies in the necessary implication of Being and Nothing, and not in any change taking place between them.

But the name of Becoming is deceptive in itself, and so is Hegel's remark that the category can be analysed into the moments of Beginning (*Entstehen*) and Ceasing (*Vergehen*)

(G. L., 109). If the implication of the two terms is to be called Becoming, there is no reason why these names should not be given to the implication of Being in Nothing and of Nothing in Being. It tends, however, to strengthen the belief that the category is a category of change. The same result is produced by the connexion of the philosophy of Heraclitus with this category (G. L., 80; Enc., 88). Of course a philosophy which reduced everything to a perpetual flow of changes would involve the principle of the implication of Being and Nothing. But it would also involve a great deal more, and once again, therefore, we meet the misleading suggestion that this great deal more is to be found in the category of Becoming.

For these reasons I believe that the course of the dialectic would become clearer if the name of Becoming were given up, and the Synthesis of Being and Nothing were called Transition to Being Determinate (*Uebergang in das Dasein*). This follows the precedent set by Hegel in the name of the last category of Measure, which he calls Transition to Essence (*Uebergang in das Wesen*) (G. L., 466).

When we have taken this view of the category, the transition to the next triad becomes easy. So long as the third category was regarded as involving change, two difficulties arose about this transition. How, in the first place, was the change which was introduced in the third category eliminated in the fourth, since Being Determinate is certainly not a category of change? And, in the third place, if this could be done at all, how could it be done as the transition from a Synthesis to a new Thesis, since this transition should not be an advance, but a restatement of the old result in a more immediate form?

On our interpretation both difficulties vanish. Change has never been introduced, and, therefore, has not to be eliminated. And the relation between the Synthesis and the new Thesis is seen to be a very typical example of the "collapse into immediacy," which should constitute this transition. For the Synthesis means that Being and Nothing are inseparably connected, and the new Thesis means that all reality consists in the union of Being and Nothing. And the second of these is a restatement of the first, in a form which has less reference to the contradiction which it surmounts, and more reference to the independent statement of the truth.

II.—BEING DETERMINATE.

A.—Being Determinate as Such.

(*a*) *Being Determinate in General.*

This, as the first subdivision of the first division of Being Determinate, has, as its name implies, no other meaning except the general meaning of Being Determinate, namely, that in all reality Being and Nothing are united.

Then, for the first time, we get the possibility of differentiation and plurality. Being and Nothing did not admit of this. Whatever simply Is is exactly the same. And this is also true of whatever simply Is Not. But under the category of Being Determinate, it is possible for x to be blue and not red, and so distinguished from y, which is red and not blue. And not only the possibility of such differentiation, but also its necessity is now established. For whatever is must also not be, and cannot be what it is not. It must therefore not be something else than what it is. And thus the reality of anything implies the reality of something else. This will become more evident later on. Meanwhile Hegel calls the various differentiations by the name of Qualities, and so we reach the second subdivision of Being Determinate as Such, namely,

(*b*) *Quality.*

We must not be misled by the ordinary use of the phrase "a Quality". As a rule, when we speak of a Quality or of Qualities, we mean characteristics which inhere in a Thing, and of which one Thing may possess many—which Hegel calls, when he comes to treat of Essence, by the name of *Eigenschaften*. We have not yet reached any idea so advanced as this. It is not till Essence has been reached that we shall be able to make a distinction between a Thing and its characteristics. And, although we have now attained a plurality, we have not yet acquired the idea of plurality in unity, which would be necessary before we could conceive one Thing as having many characteristics.

The Qualities of which Hegel speaks here are simply the immediate differentiations of Being Determinate. They do not inhere in anything more substantial than themselves; they, in their immediacy, *are* the reality. Consequently they are not anything separate from the Being Determinate. Each Quality has determinate being, and Being Determinate,

as a whole, is nothing but the aggregate of the Qualities. There is not one Being Determine with many Qualities, but there are many determinate beings. These may be called, not inappropriately, Somethings. And this is the transition to the third subdivision of Being Determinate as Such, namely,

(*c*) *Something.*

At this point, says Hegel, we first get the Real (G. L., 120; Enc., 91). It does not seem very clear why it should be at this precise point. Reality is a matter of degree, and Something is a very unreal category as compared with those later on in the dialectic. Of course Something is more real than the categories which precede it, but I cannot see on what ground Hegel refuses them *all* right to the title of reality. At the least, I should have supposed, reality would begin with the first Synthesis—*i.e.*, with Becoming.

Looking back on the two last transitions—from Being Determinate in General to Quality, and from Quality to Something—they must, I think, be pronounced to be valid. A doubt might perhaps arise as to the necessity of passing through them. Is it not clear, it might be said, that the differentiations cannot lie on the surface of Being Determinate (since that would involve a distinction between Essence and Appearance), but must be in it? And in that case could we not have simplified the process by taking Something as the immediate form of Being Determinate, and so forming the undivided first moment of it.[1]

But between simple Being Determinate and Something there is a difference—namely, the explicit introduction of plurality. The fact that the name of Something is in the singular number (inevitable with the German *Etwas*), may obscure this if we confine ourselves to the titles, but by reading the demonstrations it soon becomes evident that plurality is introduced in this triad, and remains as a permanent acquisition for the dialectic. Something, therefore,

[1] This objection may be made clearer by a table:—

I. Hegel's division of Being Determinate.	II. Division proposed by Objection.
A. Being Determinate as Such.	A. Something.
(*a*) Being Determinate in General.	(Without any subdivisions.)
(*b*) Quality.	
(*c*) Something.	
B. Finitude.	B. Finitude.
(Et cetera.)	(Et cetera.)

is more than simple Being Determinate, and requires one additional step, at least, before it can be reached from it.

We can also see why there should be two steps between Being Determinate in General and Something, and why the road from the one to the other should lie through the category of Quality. The transition to plurality takes place in the transition to Quality, since Hegel speaks of one Being Determinate, but of many Qualities. Now we can see, I think, that it is natural that, in passing from the undifferentiated to the differentiated we should first think that the differentiated is something different from that which we had previously held to be undifferentiated (and in Quality we do hold them to be different), and that it should require a fresh step of the process to show us that the differentiations are the true form of what we had previously held to be undifferentiated (and this is what is gained in the transition to Something).

We have now a plurality of Somethings. Each of these is dependent for its nature on not being the others. It may thus be said, in a general sense, to be limited by them. (Limit, as a technical term in the dialectic, denotes a particular species of limitation in the more general sense.) With this we pass to the second division of Being Determinate, which is

B.—FINITUDE.

(*a*) *Something and an Other.*

As the Thesis of a new triad, this category should be a restatement, in a more immediate form, of the category of Something. This is exactly what it is. For the category of Something, as I have remarked, included the idea of a plurality of such Somethings. And, from the point of view of any one of these, the other Somethings will be primarily not itself. So we get the idea of Something and an Other.

Since each Something is dependent for its own nature on an Other, its nature may be called a Being-for-Other (*Sein für Anderes*). But this is not the only aspect of its nature. The relation to an Other is what makes it what it is. And thus this relation is also what it is By Itself or implicitly (*An Sich*).[1] And thus this relation is also a quality of the Something itself (G. L., 129; *cf.* also Enc., 91, though the explana-

[1] It is, as far as I know, impossible to find any one English phrase which will adequately render *An Sich*. I have followed Prof. Wallace's example in using either By Itself or Implicitly, according to the context.

tion is here so condensed as scarcely to be recognisable). This takes us to the next subdivision, Determination, Modification and Limit. (I admit that Modification is not a very happy translation of *Beschaffenheit*, but it is impossible to get really good names for so many meanings which differ so slightly.)

(b) Determination, Modification and Limit.

Not content with the analysis of his subject matter by five successive trichotomies, Hegel further analyses this category into a triad of the sixth order, the terms of which are Determination, Modification and Limit. The subtlety of the distinctions at this point is so great that I must confess to having only a very vague idea of what is meant. As far as I can see, Determination is the character of the Something viewed as its inner nature, and Modification is that character viewed as something received by it from outside—is, in fact, the Being for Other come back again. It follows, then naturally enough, that Determination and Modification were identical. And from this again it would follow that, as the Something was conceived as having a nature which was both a characteristic of itself and of its Other, that that nature should be conceived as a Limit. In such a sense a meadow is limited by the fact that it is not a wood, nor a pond (Enc., 92). Now it is clear that we only get such a limit when the nature of the Something is seen to be both in itself and in its relation to an Other. The conception of a Limit implies that it makes the Something what it is—no more and no less. That it should be no less than itself requires that its nature should be in itself, so that it should maintain itself against the Other. That it should be no more than itself requires that its nature should also be outside itself, that the Other should maintain itself against it.

The correctness of this interpretation is, no doubt, very problematic. But whatever Hegel's meaning may have been in this obscure passage, we can see for ourselves that the category of Limit would necessarily have come in at this point. For, in the category of Something and an Other, the nature of each Something lay in the Other. But it is also true, as Hegel points out without any obscurity, that the nature of Something must also lie in itself. And, since the nature of Something lies both in itself and in its Other, we have the idea of a Limit—of a characteristic which, while it belongs both to Something and to its Other, keeps them apart.

Here, as Hegel remarks (G. L., 133), we get for the first time the conception of Not-being for Other. In the category of Something and an Other we had the conception of Being for Other, but now in Limit the Something has its nature in itself as well as in the Other, and so is distinguished from its Other, as well as connected with it.

At this point, therefore, we may be said to get the first glimpse of the conception of Being for Self. But it is not yet seen to be the truth of Being for Other. On the contrary it appears to be in opposition to it, and this opposition produces fresh contradictions, which cannot be solved until the true nature of Being for Self is discovered in the category which bears that name.

We now come to Finitude in the narrower sense. That this conception should only be reached at this point will not seem strange if we remember the meaning which Hegel always gives to this term. For him the Finite is not simply that which has something outside it, as the Infinite is not simply that which has nothing outside it. The Infinite for him, as we shall see in more detail later on, is that whose nature and consequently whose limits are self-determined. The Finite, on the other hand, is that whose nature is limited by something outside itself. The essential real of the Infinite is free self-determination. The essential real of the Finite is subjection to an Other.

This explains why Finitude only became explicit at this point. Two things are necessary for subjection to an Other —the Other, and a definite nature in the Something to be subjected to it. The conception of plurality was only reached at the end of Being Determinate as Such, and till then there could be no question of Finitude. When this point was reached, Finitude began to appear, and accordingly the second division of Being Determinate, which we are now considering, is, as we have seen, called Finitude. But Finitude does not become fully explicit till the Something's nature is seen to be also in itself, and not only in the Other. For till then there can scarcely be said to be anything to be subjected to the Other. Only with the conception of Limit does Finitude become fully explicit. And accordingly the next category—the last subdivision of Finitude in the wider sense—is called in a special sense

(*c*) *Finitude.*

This category is merely a restatement of the last moment of the previous subdivision—that is to say, of Limit. The

idea of a Limit is, as has already been said, the idea of Finitude, since they both imply that the limited thing has a nature of its own, and that its nature is in subjection to an Other. This conception takes the form of Limit when we view it as overcoming the difficulties which arise from the opposition between nature as in an Other and nature as in the object itself. When the conception is taken as a more immediate statement of the truth it takes the form of Finitude.

In its relation with the previous category—Determination, Modification and Limit—as a whole, Finitude is the Synthesis of that category with the previous category of Something and an Other. The last-named category asserted that the nature of the Something lay in its Other. Determination, Modification and Limit asserted, on the other hand, that the nature of the Something lay in itself. These conceptions are reconciled in Finitude.

In Finitude, as was said above, there are two sides—the internal nature of the finite Something and the relation in which it stands to the Other. These Hegel calls respectively the Ought and the Barrier (*Das Sollen und das Schranke*) (G. L., 140). The Barrier seems an appropriate name. But why the internal nature of the Something should be called the Ought is not so clear. No doubt a conscious being, when he feels himself limited by something, says that the limit ought to be removed, and that he ought to have room to develop freely. But the resemblance between such a conscious being and a limited Something is very slight, and far less important than the difference. When a man says that he ought to be able to do what, in point of fact, the circumstances do not allow him to do, he has an ideal of some course of action other than the one which he is forced to take, and he judges that his ideal course would fulfil his true nature more completely than the other course which he is obliged to take. The position here is entirely different. The content of the two opposed sides is here the same, for the Something has only one nature, which may be looked at either as in itself or in the Other, and the opposition is only between two ways of looking at it.

Why did Hegel use the word Ought? I believe that his reason for taking this particular term was that it gave him a chance of introducing an attack on the ethics of Kant and Fichte (G. L., 142; Enc., 94). This was a temptation which he was never able to resist.

But the inner nature of the Something now bursts its Barrier. The Other which limits it has no nature which is

not expressed in the limitation itself. And the limitation belongs to the nature of the Something. So that it now finds its own nature beyond the Barrier, which it has, therefore, passed (G. L., 147; the line of the argument in the Encyclopædia is rather different, and will be considered later on). To go back to Hegel's own example, a meadow is limited by the fact that it is not a wood. If we look at this example under the present category we know nothing about the meadow except that it is not a wood. This is the whole of the meadow's nature. Its whole nature is in the opposition of the wood, and, therefore, it is to be found in the nature of the wood, and is no longer something bounded and confined by the wood's nature—for what is left to be bound? We thus pass to

C.—Infinity,

the third division of Being Determinate. For the Barrier being abolished, the Something is no longer determined by anything outside itself. Thus we have got rid of Finitude, and so attained Infinity, though, as we shall see later on, we have not yet acquired the whole of the true conception of Infinity.

We seem to have got rid of constraint and obtained freedom by a very short and simple process. But it must be noticed that, at this point of the dialectic, both the constraint and the freedom can only be trivial. Constraint means the control of the nature of one thing by another. Freedom means the self-determination of a thing's nature. Thus constraint and freedom alike can only be real in proportion as the object of discourse has a developed self.

At this point the first rudiments of the idea of the self have barely appeared. And the result is that constraint and freedom are, as we have seen, almost identical. When our object has no nature but its relations to others, then, when it is determined by others, it is determined by its own nature, and is, therefore, free. But the difference between such constraint and such freedom is insignificant. As the dialectic progresses the idea of constraint will return, especially in the categories of Reciprocity, and of Mechanism with Affinity. And, with the increasing development of the inner nature of the object, the constraint will be a much more serious matter, and its removal of much greater value.

When, in the first place, the Something passes over its Barrier it finds itself outside the Barrier, and so not limited. Thus the first stage is

(a) Infinity in General.

But what is this Infinity? It has been gained by negating Finitude, and passing beyond it. Now nothing can negate anything definite, except by being definite itself. And we have seen that a thing can only be definite if it has a limit, and is finite. And thus the Infinite which we seemed to have reached turns out to be another Finite. A meadow, for example, cannot be negated by pure Being or by Nothing. It must be by some other Being Determinate. And this must be finite.

The Infinity, which had been reached, thus turns out to be finite. But, being finite, it will have its nature outside itself, and so again passes the Barrier, and becomes infinite —only once more to become finite. This process goes on without end, and so we reach the second subdivision (G. L., 149),

(b) Reciprocal Determination of the Finite and Infinite,

which may be more conveniently referred to as Negative Infinity (Enc., 94).

It may be objected that this is a category of change, and that, by Hegel's own theory, change ought not to come in till we reach the categories of Quantity. I do not think, however, that it is correct to describe this as a category of change. A category of change is one which asserts that the reality, when viewed under that category, is viewed as changing its nature. Now this is not the case here. The reality — the nature of the Something — is not conceived as changing. All that changes is the category under which we look at it. We conceive its nature, first, as being in itself, then as being generally outside itself, then as being in another Something, then as generally outside that other Something again. We oscillate endlessly between two categories. But this does not involve any judgment that the reality changes. It is only a change of judgment about the reality.

This oscillation involves a contradiction. The nature of the Something is first seen to be not Finite, but Infinite. But it is then seen to be not Infinite but Finite again. And the second step does not supersede the first, for the first step recurs immediately we have reached the second. The nature of the Something, therefore, can be found nowhere—not in the Finite, nor in the Infinite. But the Something has already been defined to have a nature. Hence there is a contradiction.

It should be noticed that Hegel never says that an Infinite Series is *as such* contradictory. He denies that there is anything sublime in endless repetition, and asserts that its only important feature is its tediousness (Enc., 94), but he does not assert it to be intrinsically inconsistent with itself. The contradiction only arises when, on the one hand, it is asserted that something is explicable or determinable, and, when on the other hand, the attempt to explain or determine it leads to an infinite series. For we cannot tell that the series will be infinite, unless we know that *no* term in the series can give the required explanation or determination. And, if no term can give it, and the explanation or determination can only be looked for in the series, then it will not be found at all, which contradicts the original assertion that it can be found.

In opposition to this it may perhaps be said that, though no term can give the required explanation or determination, the whole series may. But if the series is a mere aggregate of its terms, it can give nothing that is not given by one of them. And if the series is something more than the mere aggregate of its terms, then the solution is found in its unity, and not in the infinite series at all.

How, then, do we reach a solution of the present contradiction? It is curiously simple, for, as Hegel points out (G. L., 155), the same fact which produced the contradiction has only to be looked at in a rather different light to give the solution. That fact is the unity of the Finite and the Infinite—or, in other words, of what is within any finite Something and of what is outside it. It was this which produced the infinite series, for it was this which made the content of the Something overstep its Barrier, and then become another finite Something, and so on without end. But if we put it in another way—that the content of the Something is just its relation to what is outside it, then the Something has an internal nature which is stable through its relation to what is outside it, and the infinite series never begins. The solution lies in saying that the Something has its nature through what is outside it, instead of saying that it has no nature except in what is outside it. The conception of relatively self-centred reality thus reached is called by Hegel

(c) *Affirmative Infinity.*

The root, both of the difficulty and the solution, is that the nature of the Something cannot be found exclusively in itself.

If we conclude from this that it must be found exclusively in another thing, our position is hopeless. For anything else turns out to be a Something, and no Something has any nature which is exclusively in it. But if we simply accept the fact—that the nature of a Something is constituted by its relation to others, there is no need to go any farther. The only difficulty in the way of gaining this result is the atomistic bias of our ordinary unreflective thought—which Hegel calls the Understanding in opposition to the Reason. This bias leads us to the belief that whatever is not quite in a Something must be quite out of it, and quite in another Something. And it is not till the contradictions involved in this have been made clear that the way is left open for the true solution.

The treatment of the subejct in the Encyclopædia is slightly different. After establishing the category of Limit, he goes on (Enc., 93): "Something becomes an Other: this Other is itself Something: therefore it likewise becomes an Other, and so on *ad infinitum*". The transition here is not alternately from Finite to Infinite, and from Infinite to Finite, but uniformly from Finite to Finite. Infinity comes in for the first time in the infinite series of such Finites. This seems to me not to be so good a form as the one adopted in the Greater Logic, since it does not bring out so clearly that the spring of the whole process is the necessity for referring the nature of the Something to what is not itself. The recognition that the not-itself must be another Something is a distinct step, and is better taken as a distinct step, in the manner of the Greater Logic.

The transition to True Infinity, again (Enc., 95), is not so clear as in the Greater Logic. Hegel says that the Something stands in the same position to its Other, as the Other does to it. It is the Other of its own Other, and, therefore, "Something in its passage into Other only joins with itself". This means, I think, that when we have been driven to look for the nature of the Something in its Other we are then, by the same necessity, driven to look for it in the Other of its Other. And, as the original Something is the Other of its Other, the nature of the Something is again found in itself, and has not to be pursued through an endless chain of fresh Others. This is really the same thought as in the Greater Logic, but not, I think, so well expressed, since it may mislead us into thinking that the transitions from Something to Other still go on, though in a closed circle and not in a straight line, whereas the truth is, as we saw above, that we have now substituted for these transitions one stable relation, according to which the nature of a Something does not lie in

its Other as opposed to itself, but permanently in the relation of itself to its Other. If an alternation was offered as the solution it could no longer be an alternation of categories, but a category of alternation, that is, of change. And this is as yet impossible.

It is at this point, according to Hegel, that we first get Ideality (G. L., 164; Enc., 95) and that Idealism becomes possible (G. L., 171). Idealism consists in maintaining that the Finite is Ideal, and this, again, means that the Finite is to be recognised "not truly to be". This is more than the mere absence of the assertion that the Finite truly Is, for such an assertion is absent also in pure Being and in Nothing. The present position involves that the Finite should have been seen, and also transcended; and that we should recognise that the nature of every finite thing lies in being more than itself, and that the merely Finite would be non-existent. This is the first category in which we get some rudimentary understanding of this conception, which will have so much importance in the later stages of the dialectic.

The nature of the Something is no longer merely *in* itself, as was the case when the conception of the Something was not yet united with that of its Other. Nor is it merely out of itself, as was the case in the infinite series of Finites and Infinites. The nature of the Something is now in itself by means of and in distinction from its Other. This increases the unity of the Something, and when we restate this result, in order to pass to a new triad, we have reached the conception of

III.—BEING-FOR-SELF

(G. L., 165; Enc., 96). This is the third of the main divisions of Quality, and it synthesises the undetermined self-existence of Being with the determined existence-for-other of Being Determinate. Its first division is called by Hegel (G. L., 174)

A.—Being-for-Self as Such.

(*a*) *Being Determinate and Being-for-Self.*

The first subdivision of Being-for-Self as Such is called Being Determinate *and* Being-for-Self (G. L., 175). The position here is that a thing has *both* Being Determinate and Being-for-Self. It is, as before, qualitatively differentiated from its Other, while the Being-for-Self gives it stability, and saves it from the infinite series of Others, in which Being

Determinate, taken by itself, is compelled to seek the determination of each qualitative differentiation.

But the position cannot be maintained. For Being Determinate has, by the previous transition, been transcended in Being-for-Self, and is a moment of Being-for-Self. In so far as it is valid at all, its validity is summed up in Being-for-Self. In so far as it claims to be anything distinct from, and supplementary to, Being-for-Self, it is not valid. Therefore (G. L., 176) all Being-for-Other has now disappeared, and Being-for-Self is not for an Other. Being-for-Self has not negation "*an ihm*" as a determinateness or limit, and therefore not as a relation to a Being Determinate other than itself.

We have no longer a Something, since Hegel confines that term to the sphere of Being Determinate. At the same time we are not yet entitled to speak of a One. Let us for the present call the reality, which was previously called the Something, by the neutral name of X. The point of the present argument is that the relation of the X to the not-X has become more negative than before.

We must not exaggerate the change. The relation of the Something to the Other was already, in a sense, negative, for the Something was limited by its Other, and was what the Other was not. And, again, X is still related to the not-X. For it is only by distinguishing itself from the not-X that it got Being-for-Self at all, and this distinction is itself a relation, as will appear more explicitly when we come to the categories of the Many and of Attraction. (When Hegel says that Being-for-Self does not contain negation "as a relation to a Being Determinate other than itself" (G. L., 176), the emphasis is, I believe, on the last words. There *is* a relation, but it is not a relation to a Being Determinate, nor to anything which is, in the technical sense, the "Other" of the Being-for-Self.)

But the change is there, and is important. When the Something was determined by its Other, the positive nature of the Other was essential to the determination. The Something was this quality, and not any other, and it was determined in this way because the Other was what it was, and nothing else. Now it is different. In Being-for-Self, X merely distinguishes itself from not-X, without considering whether not-X is Y or Z. So long as it has something which is not itself, from which it can distinguish itself, it has all it wants. This is clearly a more negative relation.

The result of this change is to destroy the qualitative differences which have prevailed throughout Being Deter-

minate, and to substitute for them rudimentary numerical differences. (Number, and consequently numerical differences, are not fully developed till we reach Quantity.) For the nature of whatever Is for Self has been shown to depend entirely on its relation with what is not itself. And if that relation no longer takes account of the quality of the other term, but merely of its distinction, it follows that nothing can be known of that which Is for Self, except that it is distinct from what is not itself, and that we have no longer any qualities by which we distinguish different realities which Are for Self, except the abstract fact that each is for itself, and not for anything else. We are very close here to arithmetical units, and it is through this conception, as we shall see, that Hegel makes his transition to Quantity.

Is this argument to be accepted as valid? It may seem to be invalid that, in passing to a higher category, we should give up qualitative determination for what is practically already quantitative determination. Surely quality is higher than abstract quantity. But we must remember that, although beings which are self-determined are doubtless conceived more adequately when they are conceived as qualitatively determined, yet it does not follow that abstract self-existence without quality is lower than abstract quality without self-existence. Pure Quantity is lower than much which is qualitatively determined, but it is higher than *pure* Quality, which is what we are now discarding. And, while Being-for-Self and qualitative determination are essentially connected, and neither can develop its whole meaning except by aid of the development of the other, this leaves it quite possible that Being-for-Self, in the crude and abstract form in which the idea first appears, may be incompatible with the crude and abstract idea of Quality which we have so far attained.

The defect in Being Determinate was the absence of self-determination. It was this which produced the most characteristic of its contradictions—the infinite series of oscillations between the Finite and the Infinite. The dialectic escaped from this by the demonstration that the nature of each X was in itself, as well as in the not-X. This implied the abandonment of the old prejudice of the "Understanding," that a given content must either be completely in X, or completely out of it. But such a fundamental defect of non-speculative thought can only be conquered by degrees. Forced to admit that self-determination of X is only possible through determination by what is not-X, we endeavour to make the determination by the not-X as purely abstract and

negative as possible—depending, not on the concrete nature of the not-X, but only on its abstract characteristic of being not-X. And this inevitably leads to the X becoming equally abstract, and so indistinguishable from any other X. This leads on to Quantity, and the contradictions that arise from Quantity bring back the idea of Quality in a higher and more adequate form.

The new category to which we now pass is called by Hegel

(*b*) *Being-for-One*

(G. L., 176). And he has then no difficulty in proving that the One, for which the X is, can only be itself. If it were anything else, the Being-for-One would be Being-for-Other. And this is impossible, since Being-for-Other has already been transcended. The Being-for-One of X, then, is Being-for-Self.

It might be thought superfluous to make anything so obvious as this into a separate stage in the argument. Being-for-Self had been already reached. It is the name of the whole triad, of which Being-for-One is only a subdivision of a division. It is explicitly before us in the previous subdivision, which was called Being Determinate and Being-for-Self. And the transition from that subdivision rested on the incompatibility of Being Determinate with Being-for-Self. Surely then it should have led straight to a category asserting the sole validity of Being-for-Self, and not to a category of Being-for-One, which left the question "For what One?" to be settled by a fresh transition.

But we ought, I think, to consider the significance of Being-for-One as mainly negative, in spite of its positive name. Its essence is that Being-for-Self is *not* also Being Determinate, and it might not unfairly have received the name of Not-Being for Other.

If we put it in this way, it is natural enough to leave the consequent positive determination to a fresh category. And this category will consist in the restatement of Being-for-Self, but this time as the sole restatement of reality. To this Hegel (G.L., 181) gives the name of

(*c*) *One*,

which emphasises that negative and exclusive character of Being-for-Self, the insistence on which has produced the new category. We now pass to the second division of Being-for-Self, namely,

B. The One and the Many.

(*a*) *The One in Itself.*

The first subdivision here is, as usual, a restatement of the last subdivision of the previous division. The two bear, in the present instance, almost the same name. Now the One, since it is Being-for-Self, has its nature by relating itself to, and distinguishing itself from, something other than itself. But this other is at first only determined negatively in regard to the One. The relation of the other term to the One is simply that the other term is not the One. This other term has, therefore, to begin with, a merely negative nature. The One is limited by the not-One, by which is meant, so far, not the Many, but only something which is not the One. Thus we get

(*b*) *The One and the Void.*

The name of this category is appropriate enough as a metaphor, but we must remember that it is nothing but a metaphor. If it were a Void, in the literal sense of the term, that was related to the One, the One could only be an atom in space, which is not the case.

But the One can only be negated by something like itself (G.L., 187). The One is definite, and its definiteness depends on a definite relation with the other term. And the relation between them cannot be a definite relation to a definite One, unless the other term is itself definite. Now it has been shown that nothing can be definite, unless it is for itself, and so is a One. Thus the One can only be negated by another One, which brings us to the category of

(*c*) *Many Ones*

(G.L., 186), to which Hegel gives the additional name of Repulsion; since the relation of the Ones to each other is mainly negative.

Since the conception of the Many has been reached, the natural question to ask is How Many? Hegel does not regard this as a question which can be answered by pure thought. Pure thought has proved the necessity of a plurality—has proved, that is, that there must be at least *two* Ones. It has not proved, I imagine, that there are more than two. The proving of that would rest on the empirical fact that we are presented with more than two differentia-

tions of our experience. So far as the dialectic can tell us, the number of Ones may be any number not less than two. There is no reason, that I can see, *in this stage of the dialectic*, why the number should not be infinite, for an infinite number of Ones would not entail the contradictions which we discovered in the infinite series in Being Determinate. It is possible, of course, that, as we advance in the dialectic, we shall meet with objections to an infinite number of differentiations.

Hegel says that the deduction of the Many Ones from the One must not be considered a Becoming, "for Becoming is a transition from Being to Nothing; One, on the other hand, only becomes One" (G.L., 187). And he also warns us (G.L., 188) that the plurality is not to be regarded as Other-being, for each One is only externally related to all the other Ones—while in Other-being the whole nature of the Something was found it its Other.

We now pass to the last division of Being-for-Self, which is

C.—Repulsion and Attraction.

(*a*) *Exclusion of the One*

(G. L., 190). This is a restatement of the category of Many Ones, which, as was said above, involves the Repulsion by each One of the rest of the Many. But what is the nature of this Many which the One repels? They are other Ones, and thus the One in Repulsion only relates itself to itself (G. L., 192). The Repulsion thereupon becomes Attraction, and the Many Ones come together in a single One.

We saw, when considering Being-for-One, that the relation between the One and the not-One, however negatively it might be conceived, was still essential. And now its very character of negation and repulsion converts it into its extreme contrary—a single One in which all the Many are merged. For it was the negative and repulsive characters of the relation which deprived each One of any distinguishing quality. And it is just the want of distinguishing quality which, when the relation of the Many Ones is seen to be also positive, prevents them from remaining Many, and merges them all in one One.

That the relation should be positive as well as negative is inevitable. For all relation is connexion, and in a purely negative relation there would be no connexion. Indeed, every relation is both positive and negative, for it means that the terms are both united and separated. And thus

unity and differentiation, as we shall find throughout the dialectic, can only be developed together. An excess of either at the expense of the other always leads to an equally unbalanced excess of the second at the expense of the first.

The new category thus obtained is called by Hegel (G. L., 194)

(b) The One One of Attraction.

It shows itself to be as untenable as its opposite. If there were only one One there could be no Attraction. For what would there be to attract it, or to be attracted by it? And, again, that there should be only one One is impossible, because, as has been shown already, One implies Many Ones.

The truth is, as we now see, that Attraction is only possible on condition of Repulsion, and Repulsion is only possible on condition of Attraction. They must be united, and so we reach

(c) The Relation of Repulsion and Attraction

(G. L., 195), which concludes the categories of Quality. The last trace of Quality has now died out. It had almost entirely gone when the Somethings had been transformed into Ones, each of which was exactly similar to all the others. But a remnant still remained, in the shape of the Repulsion which each One exercised on all the rest. Now this Repulsion is swallowed up in a balance of Repulsion and Attraction. The Ones have now become indifferent to each other.

And with this Quantity has been reached. Quantity involves that the units should be indifferent to one another—that they should be capable of combination or separation without any change in their nature. This is rendered possible by the indifference which has now been established. The Ones are sufficiently under the influence of Attraction to enable them to be brought together in aggregates. They are sufficiently under the influence of Repulsion to retain their separate existence in their aggregates, so that the quantity of the aggregate varies according to the number of its units.

Quantity requires, also, that the units should be taken as equal to one another. And this condition, also, is satisfied by the Ones, which have no qualitative differentiations, and are all exactly alike. At this point, therefore, the dialectic passes over into Quantity.

IV.—DISCUSSIONS.

ON THE NOTION OF ORDER.

SOME years ago I wrote a paper[1] in which I showed that Projective Geometry might be regarded as the science of ordering or 'cataloguing' continuous groups, without necessarily ascribing any spatial import to it at all. In that paper I expressly disclaimed any intention of discussing the subject of Order exhaustively, as I was there concerned with it only for a special purpose, namely, in its bearings on Projective Geometry. I propose here to discuss the question rather more generally; but, as probably few of the readers of MIND have seen the paper referred to, I shall commence by giving an outline of the theory of order I there put forward.

I take it that the ultimate object of arranging things in order, or cataloguing them (whether it is done objectively, or merely in imagination), is to be able easily to find any given thing when it is wanted. By 'cataloguing' I understand associating (or "collating") each unit of a group with a particular unit in some group with whose order we are already familiar; such, for example, as the series of natural numbers, or the letters of the alphabet; or if the group to be 'catalogued' is too dimensional, with the points on a diagram or map, or the series of complex numbers. The theory of order discusses groups of linear or higher orders, and tells us how we may catalogue them by the aid of only one familiar linear catalogue, such as the number series, used if necessary over and over again, instead of having to make use of two or three dimensional catalogues or two or three dimensional groups. I may illustrate this by the analogy of a finite discrete group, such as the books in a library. The librarian does not attempt to make a plan of the library, with all the books marked in their places on the plan, but he provides catalogues showing the book-case, shelf, and place on the shelf, where any required book will be found. In each case the actual order (of book-cases, shelves, or books) is *collated* with a linear order (usually either the number series, or the series of letters of the alphabet) which is so well known that one recognises the order of its units at once. And the simplification of the catalogue has been effected by cataloguing *linear groups*

[1] "On the Foundations of Projective Geometry." A reprint can be obtained from Messrs. Deighton, Bell & Co.

of *groups* instead of attempting to grasp the order of the whole at once.

Closely analogous methods can be applied in the case of continuous groups. A higher group is catalogued as a *linear group* of *groups* of an order one less than that of the whole. Each of these sub-groups is again catalogued as a linear group of groups of an order two less than the whole. And so on ; till we reach sub-groups which are themselves linear. But in the case of continuous groups we cannot use a discrete series as a catalogue, and even if we use a continuous one, such as the number series (including fractions), we cannot collate any one sub-group with any number absolutely ; we can only say that it is *between* two units numbered so and so ; and choose these units so as to attain to any required degree of accuracy. If however we do this, we have succeeded in cataloguing the continuous group, in a manner closely analogous to the cataloguing of a library, in a way which can in practice be made accurate enough to fulfil any practical, or in theory any theoretical, requirement.

But what precisely is the significance of the relationship "between two units"? It is upon this that the whole theory of Order depends. To say that B is 'between' A and C means that *it is impossible to get from A to C without passing B on the way*. This of course implies that there is some sort of rule in accordance with which alone one may pass from A to C, which may be called the rule of contiguity or continuity. The process of passing in accordance with this rule I call 'passing in review'.[1] In the case of discrete groups it consists theoretically of thinking of units one after the other, the rule of contiguity being that after any given unit you must think next of one of a certain limited number of units which are said to be 'contiguous' to it. (In linear groups only two units are contiguous to any given unit ; but in the order of a chess board, for example, there are four, or you may allow six if you permit a king's move, etc., etc.) It is not however necessary in 'passing in review' always actually to think of each unit passed, in order to convince oneself that it is, or is not, possible to pass a given boundary, even in the case of discrete groups. And in the case of continuous groups, where the rule of *contiguity* becomes one of *continuity*, it is neither necessary nor possible to do so, although continuity is merely an ideal limiting case of the conception of contiguity.

[1] It is true that in 'passing in review' we are collating a series of units with a series of instants in time, which latter series is one of the sort discussed by Mr. Russell, in which the fundamental relation may be taken to be an asymmetrical transitive one between any two units. But this relation does not hold among the units we are passing in review ; we may just as well pass in review one way or the other, forwards or backwards. The relation 'between' involves at least four units, two to form a boundary and two to be separated by it, even in a linear group.

In continuous groups then, *to say B is between A and C means that B divides the whole group under discussion into two distinct parts, so that it is impossible to 'pass in review' from any unit, A in the one part to any unit C in the other, without passing B on the way.* B itself, therefore, is not a unit, but a group of units, and in general a continuous closed (or 'complete') group of units, which forms a *boundary* in the higher group, and is said to be of an order one less than that of the higher group. An exception may perhaps be mentioned, in the case where the higher group is a terminated group; when the boundary group, B, may also be terminated. But this is not quite a genuine exception, for the terminal units in the whole group themselves in reality form a boundary which completes (or closes) the boundary group B. And we may always theoretically conceive the whole group to be completed by adding units beyond the terminal ones. (For this reason, as well as in order to avoid spatial implications, I prefer to use the term 'complete group' for one whose spatial analogue is a closed line or surface.) It might further be thought, from a fancied geometrical analogy, that another exception arose in the case of groups which were 'infinite and unbounded'. But this is not so. In the science of order there is no meaning which could be attached to such a phrase. In one sense, of course, all continuous groups are infinite; for we can always conceive any number of boundaries between any two named units. But since, in theory, 'passing in review' does not take time, and since units are not in theory separated by space, there is no sense in which we can say one group is more or less infinite than any other of the same order. We can not, in passing in review, fail to get back to the unit from which we started merely because it is too far to go. There is therefore no alternative to a terminated (or bounded) group except a complete (or closed) group.

There is however one exception to the dictum that boundaries are complete continuous groups, namely in the case of groups of the first order (linear groups). In this case, if the group itself is complete it will I think at once be obvious that a boundary can only consist of two distinct units. And as I have pointed out above, in the theory of Order the only alternative to a complete group is a terminated one—*i.e.* in the case of a linear group one which is terminated by two units. In such a group one does indeed speak of one unit B as between two others, A and C, but only by tacitly including the terminal units with the B as part of the boundary which separates (or is between) A and C.

In the case of complete groups of the first order the conception of boundaries is further obscured by the fact that a boundary consists itself of two units, B and D, separating two, A and C; so that we may equally well speak of A and C as a boundary, separating B and D. In this case therefore the primitive relation from which order develops appears as a symmetrical relation between two pairs of units, and the fact that one of the pairs is

a group and the other two units occupy distinct places in the relationship is liable to be overlooked. In the general case however where the relation is between two units and a continuous group of units, this sort of symmetry does not exist, and the confusion of boundaries and units separated by them does not occur.

The theory of Order depends then upon the question whether in any given case one can, or can not, while passing in review, get past 'boundaries,' without making use of one of their units on the way. The fundamental proposition of the theory is that the order of units (as determined by boundaries) is unaltered by Projection. I prove this by imagining a 'section' of the projecting pencil to pass continuously from the initial to the final position (or rather I 'pass in review' a continuous series of sections from the first to the last, as the conception of movement has no place in the theory of order). I show that in doing so, unless the section under review passes over the origin of projection, the order of units in it is absolutely unchanged; but that if it does pass over the origin, then every unit in it passes through the origin and through every boundary in the section at the same time; and the new order (though it is intrinsically indistinguishable from the old one) may be said to be the old order 'reversed'. And taking the term 'Reversion' in a more general sense I use it to describe a process in the theory of order which turns out to be the analogue of rotation in Geometry. In the simplest case, of reversion in a group of the first order, this process may be effected by what is known in projective geometry as the Quadrilateral Construction. This construction is however only a special case of a more general process, the object of which is to collate together, with the fewest possible arbitrary assumptions, the units of all the rays of a pencil with a given origin, so that units collated together in the various rays form continuous boundary groups, together constituting the whole pencil, which groups are catalogued by the units in any one ray. (The analogue in Geometry is the polar system of co-ordinates.)

Thus, by a few simple steps, the theory of Order leads us to understand the true significance of that famous Quadrilateral Construction. It is not, as some people seem to imagine, that without it points in a line would have no order, or that the orders of points in two different lines could not be compared; for this could be done by simple projection. Nor is the object of the construction merely to lead up to numerical analysis. The use of the construction, or rather of Reversion, in general, of which it is merely a special case, is to enable us with the fewest possible arbitrary assumptions, to catalogue a group as a linear group of boundary groups, in the same way as a library is catalogued as a linear group of book-cases, each of which is a linear group of shelves, and so on.

The theory of order thus briefly described may be carried out

with certain variations in detail which correspond to the various systems of meta-geometry; and the consideration of these variations is instructive as showing that the distinctions between the various meta-spaces are cognisable by the theory of order, or projective geometry, and do not depend upon metrical conceptions, or even numerical analysis. On the other hand the subsequent transition from the abstract theory of cataloguing to the application of the number series, which is readily made, further illustrates the importance of this conception of Order to the mathematician. The simplification which it would introduce into ordinary elementary geometry is no less marked. As Mr. Russell has recently pointed out,[1] many propositions in Euclid's first book (and he might have added with even more effect several in his eleventh book) imply axioms which Euclid has not explicitly stated. But Mr. Russell himself will admit that the axioms he proposes are mere clumsy makeshifts. They are all obvious deductions from the conception of order, and what is required is proper definitions of the terms line, surface and space, either by means of the notion of order as defined by boundaries, or by means of the conception of direction (as to which, see below).

This is the outline of the theory of Order which I advanced in my paper on the "Foundations of Projective Geometry" in 1897. The paper was written in the form of a criticism on Mr. Russell's book on the *Foundations of Geometry*, published the same year. The point in his book to which I particularly took exception was his view that so long as points in a straight line "are considered without reference to any other points or figures" (*i.e.*, without a quadrilateral construction) "they are all qualitatively similar . . . when we endeavour, without quantity, to distinguish them conceptually we find the task impossible, since the only qualitative relation of any two of them, the straight line, is the same for any other two". In the discussion which followed the nominal 'reading' of the paper (it was circulated beforehand, and was too long to be read in full at the meeting), Mr. Russell categorically denied that Order had anything to do with Projective Geometry. He has however since written a paper,[2] from which it appears that he has modified this view. In this paper he discusses the kind of order, or rather series, which is generated by an 'asymmetrical transitive relation' R which has two 'senses' R_1 and R_2. The relations 'before and after,' and 'greater and less' are examples, and lead to order in Time and order of magnitude respectively. Mr. Russell also refers to a second way of generating order by asymmetrical intransitive relations—but his exposition seems to me to involve some confusion, for though the relation is supposed to be intransitive, he says, "If E is before F, and F before G, E is said to be before G," thus making the relation transitive after all, and apparently identical with the one he had just been discussing

[1] *Mathematical Gazette*, May, 1902. [2] MIND, January, 1902.

before. The distinction in his mind was perhaps that in the first case he was dealing with continuous, and in the second with discrete groups, but the fundamental relation seems the same in both cases. Besides these Mr. Russell however reecognises, in a footnote, the existence of "four other ways, of less philosophical importance," among which one, with a 'four-term relation' is slipped in, which later on he acknowledges to be "logically prior" to the others in Projective Geometry. This is in fact the relation which I discussed in my former paper, but he refers the reader to papers by Signori Pieri and Vailati, some at least of which were published before my paper, though neither I nor apparently Mr. Russell were acquainted with them at the time. These papers however tell us very little of value about the Notion of Order. They do indeed analyse the relations between points in a line by the methods of symbolic logic. But, as might perhaps have been anticipated, the symbolic logic does not appear to lead to any conclusions which might not have been reached as easily by less pedantic methods. The authors do however grasp the conception of order among points in a line as depending upon at least *four points*, two of which *separate* the other two, and they realise that this is the relation which is unaltered by projection. Of the extension of this conception of order to more than linear groups, of the generalised conception of a boundary, as a group of units, of the true significance of the quadrilateral construction, of the bearing of the theory upon meta-geometry, they however tell us nothing. Still less do they employ the conception of order to *define* linear or higher groups, or deduce from such definitions the fundamental proposition that 'order' is unaltered by projection. If they had done all this perhaps Mr. Russell would have recognised the philosophical importance of this particular notion of order; for in spite of his having been present at the meeting where my paper was (nominally) read, I can only conclude that he is ignorant of its contents.

Though Mr. Russell, as quoted above, says in one place that in Projective Geometry the four-term relation is logically prior to the two term, he, in another place, tells us the former can be 'mathematically reduced' to the latter, in support of which statement he refers to Vailati's paper. There must however be some mistake here, for that is not at all what Vailati does in his paper. He 'reduces' the four-term relation to seven, and subsequently to five, formal propositions in symbolic terms, but in each of these propositions four terms occur. It is of course true that in a series generated by the four-term relation we can subsequently recognise an asymmetrical relation between any two terms, but it can only be expressed by referring to more than two. Instead of being able to say XY has the sense R_1 or R_2, which are fundamental relations, we can only say it has the sense ABC, or CBA, where A, B, and C are three known terms in the series. It is also true that if we are given the relation R with its two

senses to begin with, we can generate a series in which we can afterwards recognise order of the other kind, as expressed by the relation 'between'. But in three out of the six or seven examples of order given by Mr. Russell we have not got an asymmetrical relation to begin with, and can only introduce it afterwards as a consequence of the four-term relation. In the case of Space more particularly Mr. Russell appears to have fallen into some confusion on this point. There is no intrinsic asymmetrical relation between two points in a line, or in space. Such relations as East and West which Mr. Russell instances, or Right and Left, or Forwards and Backwards refer implicitly not only to more than two points, but to points outside the line, and particular objective bodies with reference to which the points occupy definite positions. The conception of sense in a projective straight line to which Mr. Russell applies (in my opinion misapplies) the term 'direction' can only be defined by naming at least three points in it (as indeed is recognised by Pieri).

But the real fault in Mr. Russell's treatment of the subject (and the same might be said of that of Signori Pieri and Vailati, were it not that they do not profess to be discussing the notion of order generally) is that he confines his attention solely to linear, or serial orders. He describes well enough one way in which a serial order can be generated, but though he gives a logical analysis of the generating relation in this special case, he does not seem to have grasped the significance of the notion of 'sense' at all. He says, "Order depends fundamentally upon relations having what mathematicians call *sense*, *i.e.*, such that the relation of A to B is different from that of B to A" and he illustrates this by saying, "if there be any relation R which has two senses R_1, R_2 . . . ," and so on. But why should we not have a relation R which has more than two, or an infinite number, of senses; of which R_1 and R_2 are only particular cases? There is such a relation, namely, the relation of Direction, not in the emasculated sense in which Mr. Russell uses the term in his paper (which, as I have shown, is dependent upon the other conception of order, as defined by boundaries), but in the sense in which it is used in Vector Geometry. It is true that to develop this conception beyond the case of a linear series, which is as far as Mr. Russell gets, we require in addition another conception, whose validity, or even existence, Mr. Russell is disposed to doubt; namely, the conception of Distance, or difference of Position. These two conceptions are in fact correlative; and, logically defined, they lead unambiguously to Euclidian Geometry,[1] just as the other notion of order, depending upon the relation 'between,' leads to Projective Geometry. That the two ways of generating order are indeed intimately connected is shown by the fact that projective geometry has historically developed out of Euclidian, and by the fact that all propositions in the one geometry have their counterparts in the other, and *vice versâ*. But philosophically the

[1] See my *Foundations of Geometry*, Deighton, Bell, 1891.

notions are nevertheless distinct and independent. Conceptual, that is three dimensional Euclidian, space, is one thing and so-called meta-spaces and projective geometry generally are quite different things. They are not intrinsically spatial at all. The theory of them is the theory of cataloguing continuous groups. It is only because Space happens to be such a group that the theory applies to Space as a special case.

It is not worth while discussing whether the term Order applies more properly to the conception based on the relation 'between,' or to that developed from the conception of a two-term relation having 'sense,' or direction. Nor does it much matter whether the two-term relation or the four term is psychologically prior, since they are independent of each other. But I cannot admit that the latter relation is philosophically of less importance than the former; and, if it is not so well understood, that is only another reason why philosophers should devote attention to it.[1]

[1] On p. 48 of my former pamphlet I wrote: "Thus in the end we have to choose n arbitrary units ($P_1 P_2 \ldots P_n$) or ($P_1 Q_1 \ldots Q_{n-1}$) besides the $(n+1)$ units ($O_1 O_2 \ldots O_{n+1}$) to determine the collection completely." It is however to be observed that the units $P_1 P_2 \ldots$ or $P_1 Q_1 \ldots$ were chosen each in an already fixed U_1. Each choice therefore afforded only one degree of freedom. In the notation I employed R was the U_0 common to $O_2 P_1$ and $O_2 P_2$. Now if this unit R had been chosen arbitrarily in the U_2 ($O_1 O_2 O_3$) it might have determined both P_1 and P_2, or P_1 and Q_1, the choice of R admitting two degrees of freedom. Similarly a single unit R_{n-1}, chosen arbitrarily in the whole group (but not in any of the boundary groups determined already), might determine the whole of the units ($P_1 P_2 \ldots$) or ($P_1 Q_1 \ldots$); the choice admitting of n degrees of freedom.

But further we may note that, unless it is desired to collate the units with respect to some already known catalogue, it is not necessary to determine both P_1 and P_2 absolutely, but only to fix the relation between them by which they are collated together. This relation is the same if R is any unit whatever in the same ray through O_1. It is thus sufficient for what I may call an *intrinsic* catalogue to select, not a unit R_{n-1}, but a ray ($O_1 R_{n-1}$), and this choice admits of $(n-1)$ degrees of freedom only. It would however be necessary to select further a particular unit in this ray if we wished to collate the units with an *extrinsic* catalogue—such as the number series.

Perhaps I can make this clearer by a quasi-geometrical illustration. Let us suppose that in space we have the power of moving a foot-rule parallel to itself, or along its own length, but cannot rotate it. We have then no means of comparing the *scales* of measurements taken in independent directions, except by projection. In order to determine the scales of measurement we may choose points at unit distance from the origin in each of the three principal axes. But we might determine these three points by choosing arbitrarily a single unit (R_2) *not* in any axis or axis plane. And further if it was not required to determine an absolute scale of measurement, but only a relative scale for the three axes, it would be enough to choose arbitrarily the direction of R_2 from O_1 which would admit of two degrees of freedom instead of three. Thus, in accordance with this analogy, the units $P_1 P_2 \ldots$ chosen arbitrarily after determining the axes may appropriately be called the "scale units" of the catalogue.

EDWARD T. DIXON.

CLASSIFICATION OF PSYCHICAL PHENOMENA FOR EXPERIMENTAL RESEARCH.[1]

THE classification which we offer does not pretend to be a theoretical classification based upon a complete preliminary acquaintance with all the elements which may enter into it.

It is a practical classification especially intended for experimental work; it is to be regarded as a framework for the subsequent study of its various constituent parts.

This classification has, therefore, a provisional accuracy for the purposes of study, and does not pretend to attain to absolute truth, which is unnecessary for its experimental value.

Up to the present time, we have been almost entirely restricted to the narrow framework of classical psychology; even those who have combated most energetically the old theory of faculties none the less submit to it, as soon as they cease to confine themselves to negations and attempt positive constructions of their own.

Thus, after many attacks in matters of detail, we may say that the classical psychology still rules and continues to impose its governing conceptions. Problems and questions are always formulated in the same way; and the chapters which treat of attention, of memory, of association of ideas, of the sentiments and of will are always in the same place, and we are so much accustomed to this classification that we practically accept it without discussing its foundation.

It is strange, seeing that psychology treats of the facts of consciousness, that we should be so much taken up with the more or less complex operations which involve states of consciousness as their components, and so little occupied with the states themselves and their characteristics.

We know that a physical, chemical or physiological phenomenon has each its own characteristics. Ought not a psychological phenomenon also to possess such characteristics, and if it does, what are they?

That is the fundamental question of psychology, the foundation on which the whole edifice should be based. Now, that is the only question whose depths we have forgotten to plumb.

The essential starting point, therefore, is to define what is meant by a state of consciousness and to determine its characters; and it is from the development of these characters that all psychological operations proceed, and not from new processes, superimposed, and, as it were, born of nothing. It is in the play of these well-defined elementary phenomena that the ultimate complexities of the intellectual life will manifest themselves.

[1] The substance of this article formed the subject of a paper read before the Physiological Congress of Vienna, 1901.

Psychology is the science of the phenomena of consciousness.

What, then, is a conscious phenomenon? The psychical phenomenon is not independent of physiological phenomena any more than a physiological phenomenon is isolated from physical and chemical phenomena and presented as something self-complete; but just as a physiological phenomenon is differentiated from physico-chemical phenomena by the practically irreducible element —life, so the psychological phenomenon is distinguished by another irreducible element—consciousness. A physiological phenomenon is a physico-chemical phenomenon plus life; a psychological phenomenon is a physiological phenomenon plus consciousness.

Again, in the same way as life animates physico-chemical phenomena, consciousness illumines, so to speak, physiological phenomena. In short, we may define the phenomenon of consciousness by saying that it is our method of recognising physiological phenomena, or, at least, certain of them. In each physiological phenomenon, everything is presented to us except the awareness of the phenomenon, and this is the subject-matter of psychology. Often, too, when we are unable to study physiological phenomena directly, because they are too complex and too difficult to be reached by experiment, we have the means of studying them indirectly by the peculiar mode of apprehending them which the subject of them himself possesses, that is to say, by the psychological phenomena which, in themselves, are capable of being studied experimentally.

When we speak of the phenomenon of consciousness as our way of being aware of physiological phenomena, we do not mean to introduce personality, although the exigencies of language make it appear as if we did so.

This mode of cognition does not imply a cognitive subject, or, at least, a subject external to the particular object cognised. The state of consciousness is itself that which knows, and the physiological phenomenon which constitutes it is that which is known. We may say, therefore, that it is a phenomenon of "auto-cognition". It is for this reason that physiological phenomena not cognised by our "ego," and taking place outside it, cannot be styled unconscious, as, with the utmost impropriety, they have been for a long time past.

There is no absolute beginning, and every phenomenon which becomes conscious has been so before, and has never ceased to be so. There cannot be any difference except one of degree, and there is still no valid objection to the law of continuity of Leibnitz. At the same time, there is a difference depending on a confusion of terms, for we do not call anything conscious which is not cognised by an "ego". Introspection, being supreme, and exclusively mistress of the position, has declared that only the elements recognised by it were conscious, everything else being non-existent for it; and yet these neglected elements have a capital importance in psychological life, as has been abundantly demonstrated during

the last few years; and they have also the same characteristics and follow the same laws as those which are considered conscious by introspection.

Still, as introspection must not be entirely neglected, far from it, and as the fact of a phenomenon being recognised by it or not is of real importance, we may translate this slight difference in terms by adopting the word *conscious* to designate phenomena cognised by the "ego," by synthesis, by personal consciousness; and *subconscious* to designate those which are not thus cognised, which are external to the "ego," and, as it were, "beneath" it. But, we repeat, these phenomena, conscious or subconscious, possess the same characteristics, and obey the same laws.

Understanding "state of consciousness" in this sense, what are its fundamental and irreducible characteristics?

1. Intensity. The first of these characteristics is quantitative, it is that of Intensity.

Every state of consciousness has a certain force, a certain intensity; it is either faint or lively. But a state of consciousness may be of two kinds: either it is new and presents itself for the first time, or it has appeared before, and merely repeats itself, in which case it is an old state which revives and renews itself.

The intensity of the new state of consciousness, then, we will call *attention*, giving the name of *memory* to the intensity of the old state at the time of its reinstatement. In this way, attention and memory appear to us to be capable of existing as simple elementary phenomena.

2. Characteristic. Affectivity.

Our second characteristic is not quantitative but qualitative, and is that of Affectivity. Every state of consciousness is invested with a certain affective tone, which we call pleasure or pain.

3. Characteristic. Objectivation.

To these characteristics, quantitative and qualitative, which are undeniably present, we have to add another, the tendency natural to every state of consciousness, to objectify itself.

It is well known that, when there are no "reducing" factors, every image has a tendency to become external, to appear real; every idea to be realised, executed, transformed into action. A visual image seems to have an external objective reality, and a muscular image gives birth to a real objective movement. This self-realisation, this objectivation, is a rule, or, more properly speaking, a characteristic common to all states of consciousness in proportion to their quantitative characteristic of intensity. It is only the struggle between tendencies, necessarily incompatible with one another, which prevents any particular tendency from being fully actualised. This characteristic of motor objectivation may be termed *will*. Here again, this is not that complex phenomenon which appears in the contents of the manuals of psychology; we employ the word because it is from this characteristic that the complex operation itself proceeds.

When the form of objectivation is sensory, in the experimental sense of the word, it may, with the same reservations, be called *certitude*.

In the first case, there is a self-realisation, a tendency which takes effect in the production of an object; whilst in the second case, there is an independent reality which imposes itself as external to the subjective characters of the process, a belief dependent on the existence of the object.

Inasmuch as the different characteristics of a conscious state are not external to one another, but mutually interpenetrate, we are able to note an influence of affectivity on the tendency to objectivation, which invests its quantitative characteristic of intensity with another that is qualitative, *viz.*, that of significance.

The tendency to objectivation, positive in the case of pleasure, is negative in the case of pain. The will presses, in the first case, towards a positive action of realisation, and, in the second case, towards a negative action of suppression, towards negation; the objective characteristic of pain manifests itself in the same way as that of pleasure, but the one aims at continuance and increase, the other at diminution and suppression.

4. Characteristic. Affinity.

Finally, alongside this characteristic of objectivity, we find the last characteristic, still one of tendency, but no longer of tendency to objectivation—this time it is a tendency towards association. Strictly speaking, this tendency is unable to manifest itself in an isolated state of consciousness, like the other characters, in the isolated state it is only potential; it develops itself, however, as soon as a second state of consciousness appears alongside the first. In the same way, two chemical substances which have a tendency to unite cannot display this tendency while they are isolated; but the tendency develops itself as soon as the substances are brought together.

This fundamental characteristic of states of consciousness we shall call *affinity*, from its resemblance to the chemical phenomena bearing that name. For this new word we have, the philosophical authority of Kant, who has already employed it;[1] he calls affinity (*affinitas*) a sensory, productive faculty, alongside those of formation in space, and of association in time. We do not give the word affinity the same meaning as Kant, but a wider one. What we call affinity includes his affinity and his faculties of association and formation. Here, too, we must preserve Kant's distinction between the faculty of formation in space and that of association in time, for it is well founded, and answers to a needful division of our characteristic of affinity.

Affinity is, in fact, either purely discursive, as when one state of consciousness arouses another which takes its place, this again another, and so on, like transmission in a magnetic chain, but

[1] Kant, *Anthropology*, xxxi.-e., pp. 94, 95, Tissot's Translation, Paris, Lagrange, 1863.

preserving the distinct individuality of each state of consciousness which does not persist but vanishes as new states appear, or else it is association in the Kantian sense, a truly synthetic process in which one state of consciousness arouses others which become united with it, form with it a group of a certain unity, and crystallise round it, if we may again employ an expression taken from the language of chemistry, seeing that it is principally in this that chemical affinity consists; and this phenomenon Kant called formation in space, because it is a simultaneous combination.

It is this last kind of affinity which is the most important in forming the complex constituents of psychological life. It is by means of this that the simple state of consciousness (the image) acquires complexity, and becomes perception and idea; that the phenomena of attention and will attain their full development; and that, finally, personality is evolved. Also, this synthesis of simple elements, as in chemical compositions, will be very different from the elements composing it, of which it is not the sum, but really the combination, and this will elucidate many psychological obscurities. Affinity, like the tendency to objectivation, possesses the qualitative and quasi-affective character of significance; it is positive or negative; there are elements which attract and others which repel; and it is the laws of these phenomena, partially taken into account, which have been called the laws of association of ideas. This is a point for later discussion. Meanwhile, we shall try to show how the whole of psychology is built up from these broad and simple foundations. We have replaced the pyramid on its base.

We have said that we must set out from the simple state of consciousness, and that the development of its characteristics will give us all psychological operations. But where are we to find an absolutely simple state of consciousness?

Sensation has generally been regarded as presenting this irreducible simplicity. But is it really so? It would appear not.

Let us take an auditory sensation ordinarily regarded as simple. We know that this sensation is excited by a certain number of acoustic vibrations succeeding one another. The sensation then, being single, must condense these several vibrations in a unity. We know, besides, that when the number of vibrations per second is too small, this condensation is not produced. There are cases in which we can detect the condensation as it were in the act of taking place. If there is a certain interval between successive vibrations they give rise to distinct sensations, but if we bring them continuously nearer to each other in time there comes a moment in which there is only one sensation, one simple sound, different, and, in a manner, new. In this case, there has certainly been a condensation. We may demonstrate the same phenomenon in other kinds of sensations. We need only refer to the disc displaying the colours of the spectrum, which, directly it attains a certain velocity, gives to the eye a single sensation of white.

We need not discuss the physiological reasons for these facts which we are examining only from a psychological point of view.

We see, then, that sensation is a synthesis, seeing that we can reconstitute it ourselves, to a certain extent, by making the synthesis. And yet, although it is a synthesis, it appears incapable of analysis and therefore simple. What is the reason of this? It is because our analysis deals only with conscious sensations, that is, those which can be recognised by personal consciousness, while subconscious sensations escape us. Now, there are subconscious sensations. Reason assumes their existence, and experience proves it. Reason assumes their existence, relying upon the law of continuity of which we have already spoken : *viz.*, Nothing comes into being suddenly, without having been more or less definitely prepared beforehand. When the vibrations become rapid enough to give birth to a single sensation, can we admit that this sensation is suddenly created, without existing in a previous preparatory stage? The fact alone that the threshold of the sensation is variable, being higher or lower according to the condition of the subject, his attention or inattention sufficiently answers this question.

What would cause the birth of the sensation to be sooner or later if it appeared suddenly? We must certainly allow that, before there is any sensation of personal consciousness, there has been a subconscious sensation. That which takes place as the conscious sensations blend into one, ought also to occur in the case of the subconscious sensations at the moment when they reach the threshold, which is variable, of personal consciousness. This abundantly justifies the view of the great Leibnitz, who, at a time when psychology had only a rudimentary existence, understood that, when we have one single sensation of the sound of the sea (to take his example), a fusion of sensations must have taken place, which he declared to be unconscious, giving them the name of "little perceptions," sensations corresponding to all the multiple sounds attributable to each wave, whose voice takes part in the general clamour. The existence of subconscious sensations has also been made clear by accurate experiments on olfactory sensations, and on the disappearance of sensations answering to persistent excitations. The complexity of the conscious sensation, then, has been made quite clear both by synthesis and by analysis. Even the subconscious sensation itself is not, perhaps, absolutely simple.

We have always spoken, in classical psychology, of the difficult problem of the general idea. But sensation is a general idea; at every stage it is a synthesis; it simplifies and condenses; the complexity of the physiological phenomena is expressed and made known by a more simple state; the complexity of subconscious phenomena, too, is expressed by a conscious phenomenon which is single and therefore more simple. Thus, at the point where we are obliged to begin these psychological studies, we have already

behind us what we shall meet with in due course as we go forward. We are at one point in a curve, of which we cannot see the beginning, but which, we know, obeys the same equation, and follows the same laws before it reaches us as after we have reached it; and it is its development that we are to follow.

And now we are able to answer the question: What is an absolutely simple state of consciousness? It is a subconscious state which evades our direct investigations. But we can begin with a condition that is practically simple and irreducible, and that will be the conscious sensation.

Without forgetting that the sensation itself is formed by the development of the primitive characteristics of the elementary states of consciousness, we shall treat it as being the psychical atom, with which we may build up, by synthesis, the psychological elements in all their complexity, returning always to it, in our analysis of complex elements. And we may do this without scruple. For even the atom of the chemists, which eludes their investigations whereas the sensation is perceptible to us, can no longer be considered by them as simple; they are obliged by facts to regard it as a system and a synthesis.

The conscious sensation, then, is the elementary psychological phenomenon. But there are different kinds of conscious sensations:—

- Internal Sensations (corresponding to the internal excitations devoid of specific quality):
  - Mucous.
  - Muscular (effort, fatigue, etc.).
  - Osseous.
  - Visceral.
- External and Relative Sensations (corresponding to the external excitations affecting the organs of special sense):
  - Tactile:
    - caustic.
    - electric.
  - Olfactory.
  - Gustatory:
    - salt.
    - sweet.
  - Auditory:
    - intensity of sound.
    - pitch.
    - timbre.
  - Visual:
    - luminous.
    - chromatic.
    - stereognostic.

We find ourselves here in the presence of a certain number of groups of elementary states. We must now examine the characters inherent in them which we have already enumerated. But here a great difficulty presents itself. As soon as we seek to abstract one of these fundamental characteristics in order to study it by itself, we find ourselves obliged to imply a cognisance of all the others. This is a serious complication, which appears very difficult to unravel. We shall, therefore, try to classify a little, at the risk of not being perfectly true to reality.

And first of all, briefly, what are the essential points which must be made clear before commencing our more detailed study?

It must be noted, in the first place, that it is impossible, in effect, to study states of consciousness in absolute isolation from one another, for it is never the case that there is only one single state of consciousness in the mind. So, then, the characteristic of affinity, which is not of much importance in the study of a state of consciousness taken by itself, is, on the contrary, paramount in actual psychological studies, for it is constantly implied by the co-existence of multiple states of consciousness.

Furthermore, though a sensation is indeed practically an elementary state, it may undergo a slight modification and take on a different aspect ; the sensation which is the response to an external excitation, may, in accordance with a characteristic which we have pointed out, repeat itself, after having existed as a new state of a certain intensity, and become an old state, with a certain intensity.

Now, when this state renews itself thus, independently of any external excitation, we no longer call it sensation. And as, among the various states which co-exist within consciousness, it is the renewed states which are the most numerous, the number of co-existent states being very limited, there is a reason for assigning to them, from this time onward, their proper place.

We call these revived states *reminiscences*, and the series of operations which govern their revival, *memory*.

As for these two characteristics of affinity and memory, we can henceforward make it clear that it is in them that we find what is really fundamental in psychological life. In fact, states of consciousness do not remain side by side without recognising or influencing each other, like indifferent strangers. They have relations *inter se*, relations of affinity, without which no psychological operation can take place.

On the other hand, states of consciousness are not meteors which appear and disappear without lasting, or leaving a trace behind them. They do not vanish for ever, or the relations of affinity would be passing and fugitive. There would never be any connexion between the old states and the new which would totally ignore the old ; there would be nothing but, as it were, a series of fragmentary moments, strangers to one another. There would occur, in the domain of time, what, without affinity, would happen, to some extent, in space. Without affinity there would be no unity, without memory there would be no continuity in psychological life ; and as psychological life implies necessarily unity and continuity, we may say that without affinity and memory no psychological life is possible.

We proceed, then, in the first place to show what the development of this characteristic of affinity will bring about in psychical life through the interaction of the states of consciousness to which we give the generic name of *images*.

If we study synthetical affinity, we see that the *sensations* which arise within a given time have a tendency to combine, and to form a whole, which we call *perception* of an object, which, if it be

complete, comprises visual, auditory, tactile, thermal, muscular, olfactory and gustatory sensations, or, if incomplete, perhaps only a few of them.

We have here a new state which is a true unity, for it arises, not from an agglomeration of sensations, but from a real synthesis. And this condition may serve as a foundation for new syntheses, all being practically simple, like sensation, only one step higher on the psychological ladder.

Perceptions also which are present together act and react on one another in virtue of their positive or negative affinity. There are further groupings and syntheses: the perceptions of different objects unite and form a state which is called *idea* or *conception*, which represents the fusion of a great number of perceptions.

The notion or idea of a man or of whiteness results from a great number of perceptions of men of all kinds or of various white objects.

Conceptions themselves attract or repel each other, but their action is not limited to themselves; the other conditions of consciousness, the other images of psychical life, even perceptions and sensations are not excluded. And the complex play of the affinities of all these states presents two forms, two different degrees: *judgment* and *reason*. Judgment and reason appear as special constructions of the mind; they do not seem to result, like perception or even conception, from the simple action of external objects. As a matter of fact, even for the formation of a conception or of a perception, we might say even of a sensation, there must be a special creation of the mind, a peculiar play of conscious states. But this is specially clear when the state which results does not correspond to an object. This has been already seen in conception, and it is observed also in judgment and reason. *Judgment*, therefore, is a certain synthesis of conceptions. But in this case our synthesis is not so perfect, and the simplicity of the state of consciousness is less apparent. The proof of this is that language leaves conceptions disconnected in judgment, whilst it unites perceptions in the corresponding conception. And yet there is a real synthesis in judgment, and, in reality, we may consider that we have again only to do with a single state of consciousness. This is so true that many psychologists, noticing the characteristics of synthesis in judgment, and finding this synthesis in perception and even in sensation, have declared that perception and sensation comprise judgment. This depends on the definition of judgment.

But, when we reach *reason*, which is an attempt at the synthesis of several judgments, it appears that this degree of unity is not attained. In fact, there are really many cases where the terms seem to remain actually disconnected, associated by a discursive affinity, by a passage of successive terms, rather than by a synthesis of co-existing terms. But, in truth, there is generally a partial synthesis, at least, of several terms of the reasoning process, and

sometimes, even, all the terms synthesise themselves into a single judgment which almost takes the form of a conception or of an initial perception.

We have now passed in review all the results of the play of affinity among the states of consciousness, from sensation up to reason, including perception, conception and judgment.

But there is still one synthesis, and one which is essential to psychological life, that is, the synthesis which results in *personality*.

The sensations which co-exist at a given moment seem to furnish what is called "cœnæsthesis," which is a partial synthesis, the germ of that complete synthesis which is personality. When new states associate themselves with the old, there is formed in the mind a certain synthesis, incorporating a great many states of consciousness of all kinds, an association which exerts a positive affinity of attraction in proportion to its mass (if we may use the expressions of physical law) on the new states which may present themselves; which thus become aggregated together, and take on the character of what is called personal consciousness. There are some states which escape this grouping, *viz.*, the subconscious states, which can only be grouped into a new personality if the inhibition exercised by the first personality is very weak, that is to say, if that personality is too poor to exercise a considerable positive or negative affinity.

Personality is a synthesis in the bosom of which the free play of the affinity of the states of consciousness can form or dissolve partial or limited syntheses of a lesser complexity. We may now consider as acquired all the states obtained in this way, and may study what remains to be considered of the other characteristics which should belong to them.

By the side of synthetic affinity is found discursive affinity, commonly called association of ideas, considered as a sort of chain, the links of which are united, end to end, in a single line. It does not seem to us that it is really so, and, in truth, discursive affinity seems to be nothing but an incomplete synthetic affinity. Each state of consciousness ought rather to be regarded as a centre of affinity or of attraction than as a link suspended from others by the two ends.

Association radiates, so to speak, from a centre; but a synthesis does not necessarily result from it because of the inhibitory action and reaction on one another of the competing fields of attraction; and, if syntheses are formed, it is outside the personal synthesis, whose attractive influence dominates all others.

It is in this way that a state of consciousness, which is a centre of attraction internal to the personal synthesis, is able to attract other states, among which one, responding more easily to personal affinity, may serve afresh as a centre of attraction, and so on, thus producing the illusion of the unilateral chain.

We may note, in passing, that this association holds for all states of consciousness, and not only for ideas and conceptions.

After having considered affinity under all its forms, the character that by its importance is the next to claim our attention is *intensity*.

We have stated that every state of consciousness has a certain quantitative value, which we call intensity, whether it be sensation, perception or conception. All these states have an intensity which is, in a manner, intrinsic; but they also possess another which results from the position which they occupy in the various synthetical groups of the mind, especially in the personal synthesis.

Intensity then takes the name of *attention*. Attention is the personal intensity, if we may so speak, of a state of consciousness. Personal intensity may concentrate itself entirely on one state, either because it is nearly alone, or because it is in the true centre of organisation of the synthesis.

Personal intensity varies, for different times and different individuals, and according to the intrinsic intensity proper to the single state, for this also helps to constitute personal intensity. The degree of memory is the personal intensity of old states which unite in the synthesis of the "ego".

Consequently, the intrinsic intensity of each state, whilst it is an important element of personal intensity, of attention or of memory, always remains independent of them.

There is, in fact, no memory except by personal synthesis, for memory is not the simple preservation of remembrances. There is necessarily a return to personal synthesis of the states which formerly belonged to it, resulting from the play of affinity.

Affinity depends, besides, on intensity, which is, if we may say so, the measure of its power of attraction or repulsion. Affinity depends also on another characteristic, *affectivity*, which supplies, in a manner, what is specific or individual in each state; it is that which renders affinity attractive or repulsive, and consequently presides over the groupings and the syntheses. It is the qualitative characteristic of the states of consciousness.

Without insisting on the delicate question of emotion, we may, however, remark that emotion must result from the relations of the personal affinity and individual affinity of every state which enters into it, by means of the attraction localised in one of the states constituting that synthesis.

Finally, the last characteristic is that of *objectivation*. It is by means of this that all states of consciousness attain their ends and realise themselves. This tendency often governs certain groupings and certain syntheses. It is, so to speak, the further development of affinity—a teleologist would say its end.

Perception is the objectivation of sensations. Judgment is the objectivation of conceptions. Many psychologists, as we have already said, declare that there are judgments in sensation and in perception.

We may say that there is in all these syntheses what we find also pre-eminently in judgment, *affirmation*, which is the manifestation of this very character of objectivity.

But objectivity plays an especially great *rôle* when it becomes personal objectivity. To it belongs constructive imagination, personal and voluntary, this word voluntary expressing what is objective in personal synthesis. All mental constructions under the form of images, judgments or reasoning, true or false, proceed from this character.

And the affectivity of the states, which acts on objectivation, is reacted on by it; for all these characteristics are, as we have said, in a constant state of reciprocal action and reaction upon each other.

Four new psychological manifestations result from this interplay, four complex characteristics of certain states of consciousness. These are, for objectivity under the form of a tendency towards reality, *belief*, still disputed; *certainty*, no longer doubted; and, under the form of a tendency to realisation, the parallel characteristics of *desire* and *will*.

We cannot here enter into details, and show that our language and our manner of interpreting and expressing psychological phenomena is equal to the most delicate manifestations. We content ourselves with offering this general classification as a framework capable of supporting researches in experimental psychology, for which we seek to furnish the instruments and the methods.

TOULOUSE, VASCHIDE ET PIERON.

V.—CRITICAL NOTICES.

Dictionary of Philosophy and Psychology: Including many of the principal Conceptions of Ethics, Logic, Æsthetics, Philosophy of Religion, Mental Pathology, Anthropology, Biology, Neurology, Physiology, Economics, Political and Social Philosophy, Philology, Physical Science, and Education; and Giving a Terminology in English, French, German and Italian. Written by Many Hands and Edited by JAMES MARK BALDWIN, Ph.D. (Princeton), Hon. D.Sc. (Oxon.), Hon. LL.D. (Glasgow), Stuart Professor in Princeton University, with the Co-operation and Assistance of an International Board of Consulting Editors. In three volumes, with illustrations and extensive bibliographies. Vol I. New York: The Macmillan Company. London: Macmillan & Co., Limited. 1901. Pp. xxiv., 644.

To criticise a book of this kind is not an easy task. In the first place, the work is very bulky and, as its quaint title-page indicates, of very miscellaneous contents. In the second place, it is as yet incomplete, and many articles cannot be fairly judged till they can be read in connexion with other articles which are referred to in them, as supplementary or explanatory; and, in particular, for fuller bibliographical information we are referred to the third volume. Lastly, the value of a dictionary and the merits of its different portions can only be properly tested by repeated consultation and, above all, by seeing what results follow from the use made of it by students, who will resort to it as a convenient short cut to knowledge or as a guide to further study. Thus, whatever I venture (and I can only speak for myself as yet) to say on the matter now must be regarded as subject to reconsideration; and I may add that I am seated most unwillingly in the judgment-seat of the critic, driven there by the pressure of the Editor of MIND. Had I been able to carry out what I once promised, I should myself have been amongst those in the dock.

In the endeavour to judge fairly we must note first the special objects which Prof. Baldwin has had in view in undertaking so extensive and laborious a work. "Two purposes," he says in the "Preface," "are combined in it, which may be distinguished without attempting to decide which was more important in the

execution; first, that of doing something for the thinking of the time in the way of definition, statement and terminology; and second, that of serving the cause of education in the subjects treated." As to the second of these purposes we are told that the dictionary "aims to state formulated and well-defined results rather than to present discussions". It is on pedagogical grounds that the Editor justifies the inclusion of many subjects which are not philosophical, but are considered useful for the student of philosophy, *e.g.*, a glossary of the nervous system, definitions of physical terms, accounts of biological discoveries. On the other hand we are told, as a reason for limitations, that the work "is not, and does not include, a history of philosophy," though "the writers, one and all, approach their topics from a historical point of view; this is one of the distinguishing features of the work". In especial we are warned not to expect a dictionary of Greek and Scholastic Philosophy. "The student of scholastic thought, as of Greek thought, will find so many gaps that it is only just to our limited purpose to warn him of them in advance. It is a change which has come into the subject—this facing of philosophy towards science and modern life, instead of towards logic and ancient life—and in consciously accepting the change we accept as well the inevitable criticism it will bring upon us." To the present reviewer the criticism is certainly inevitable that it is always dangerous for philosophy to attempt to disregard our intellectual inheritance and that to turn away from logic at all is to court confusion. "It is upon the psychology of this work that most of its lines converge" (p. x.). "Biography is not made a prominent feature—quite the reverse. Only the outstanding biographical facts are recorded, which any reader of philosophy should know, or know where to find, if he is to be educated" (p. xiii.).

Now these principles of inclusion and exclusion have been deliberately adopted; and the work must be estimated on that understanding. Nevertheless the question might well be raised, whether the principles are quite satisfactory. For one thing, though the history of philosophy cannot be properly treated in a dictionary, historical and biographical material admits of fairly adequate treatment in such a work, and is in fact much better adapted for articles in a dictionary than new theories in psychology and in the objective sciences with which psychology comes into connexion. A dictionary on so elaborate a scale ought, it may be hoped, to remain a permanent book of reference for several generations of students and teachers. Now it is possible to supply brief accounts of Greek or scholastic philosophy or of the philosophies of the seventeenth and eighteenth centuries, which may be expected, with a few corrections and some additions to the bibliography, to remain useful twenty or even fifty years hence. But is it reasonable to expect that rather long articles on the accepted psychological theories of to-day—if indeed they are "accepted"—will be equally useful after that lapse of time? It

is more easy to provide a dictionary article that "will wear well" on "Cartesianism" or "Epicureanism," on "Fichte" or "Herbart," than on "Association" or "Heredity," on "Inhibition" or "Laboratory". The more the subject belongs to a new and growing science the less adapted does it seem for dictionary treatment. Still the more difficult course may justify itself as the nobler and the more useful. Let us admit then, that while including a physiological text-book, with diagrams and glossary, on the Brain, and fairly lengthy articles on medical subjects such as epilepsy and hysteria (subjects which are treated in existing Medical Dictionaries and text-books), it is right to cut down the biographical and historical articles to a minimum: it surely becomes of special importance that these brief entries should be as scrupulously accurate, precise and unambiguous as possible. The special students of Greek and scholastic philosophy are warned off and are not likely to be led astray by inaccuracies in their own subjects. But it is just the students who have had no sufficient education in "the humaner letters" and who have been brought up in psychological laboratories, that might reasonably expect to find brief, easily accessible and trustworthy information provided for them here on the subjects in which they have neither the time nor the mental training which would enable them to get first-hand information. For the sake of such students the biographical, historical and linguistic notes, however slight, should have been most carefully put together. A rapid inspection of the Dictionary shows, however, that this part of the work has been carried out in a somewhat hap-hazard way, upon no discoverable system and with insufficient accuracy. Names and terms seem included or excluded on no definite principle. There appears to be no uniformity as to the spelling of names or as to the language in which they are given. Sometimes the works of an author (or some of them) are mentioned and sometimes not. There are numerous articles more appropriate in character and in mode of treatment to a theological dictionary than to a philosophical—articles whose inclusion might indeed be justified if other more properly philosophical material were more adequately treated. Thus we find "Adam" (but not Eve); yet the article does not give just the information which a philosophical student might expect to find in a dictionary "for philosophers," *viz.*, the peculiar way in which the Latin Church made a genitive case in a Hebrew name, *e.g.*, in those profoundly philosophical lines from the Roman ritual which Leibniz quotes in the *Theodicée* (Erdmann, p. 507 *a*) beginning:—

"O certe necessarium Adae peccatum".

Under the heading "Alexandrian School" an account is given of Neo-Platonism, with no indication that many scholars object to the description of Neo-Platonism as specially "Alexandrian," and with no reference to any separate article on the subject,

though under "Eros" and "Cudworth" references to an article on "Neo-Platonism" will be found. In the article on the "Alexandrian School," "Clemens and Origen" are referred to—a want of symmetry in naming. "Clement" is used *s.v.* and in "Christology". "Josephus" is included in this Dictionary of Philosophy, while Hypatia is left out. "Basilides" is given, with no hint to those ignorant of Greek, how to pronounce his name. Under "Alexander" are rightly given Alexander of Aphrodisias and Alexander of Hales. There are also three Alexanders of Princeton, who appear to have been an academic dynasty comparable with the Alexander Monro's of Edinburgh; but nothing is said to show why these three theological professors are included in a dictionary which excludes Chalmers, who was a professor of moral philosophy, Calderwood (though he is rightly mentioned *s.v.* "Intuitional Ethics"), Coleridge, Carlyle, Principal George Campbell (author of *Dissertion on Miracles* in answer to Hume, and *Philosophy of Rhetoric*). Other omissions are Alcmaeon of Croton, Aldrich, Apuleius, Marcus Aurelius, Julian (named in article "Alexandrian School"), Burke, Beccaria (named in article "Greatest Happiness" and in bibliography in "Crime"), Bossuet (though Fénelon is given), Bolingbroke, Culverwel and Glanvill (both named in article "Cambridge Platonists"), Erasmus Darwin, John Grote (though cited in article "Knowledge") Hippocrates (Galen is included), Archbishop King (who wrote an *Essay on the Origin of Evil*). The only Dionysius who receives notice is the Bishop of Alexandria, who was a pupil of Origen, but whose "greatness" is ecclesiastical, not philosophical. There is no article on Dionysius of Halicarnassus (important in the history of Æsthetics) nor on Dionysius "the Areopagite" (he is not even mentioned *s.v.* "Erigena"), nor on Dionysius "the Pervert" (from Stoicism to Hedonism), on whom Bayle has the laconic notice "Denys d'Heraclée, philosophe débauché. Cherchez Heracleotes"—an entry whose stern brevity is indeed surpassed in Addis and Arnold's *Catholic Dictionary* (ed. 1): "Origen.—See Hell."

We might have expected some notice of Fleming, whose *Vocabulary of Philosophy*, though a very imperfect work even in the latest revised edition by Prof. Calderwood—containing some very good articles, and some very defective ones—was an attempt to do in English on a small scale what Prof. Baldwin is doing on a large. The revised Fleming, though not strong in its Greek, might have saved the new Dictionary from the entry under "Academy"—"(Gr. Ακαδέμος, proper name)". "Anaximines," "Andronicus Rhodus," "Iamblicus" need correction. It may be suggested that the best mode of treating proper names in a dictionary for students of philosophy would be to enter the name under its usual English form, to give it in the original language (transliterating, if necessary) and then in Latin, French, Italian and German. This would be carrying out the excellent plan here adopted with philosophical terms, so far at least as the modern

languages are concerned, and would be most useful to the student who might perhaps in reading French or Italian fail at once to recognise "Denys d'Halicarnasse," "Boèce," "Gilles de Rome," "Tale," "Eraclito," "l' Abbate Gioacchino"; and it might save the translators of German works from writing (like the translator of Ueberweg's *History of Philosophy*) in English of Dicaearch, Anton Arnauld and Franz Suarez.

Of "Thomas Äquinas" we are told that he was "of royal family," but the word "Aquinas" is not explained, nor are we told that he was the "Angelic Doctor". The brief article on Duns Scotus is much more useful. There seems to be no principle with regard to the language or languages in which names are given. Thus we have "Ficino (Ficinus) Marsiglio (Marsiglius)," where the Latin surname is certainly not the usual form: "Jerome, Sophronius Eusebius Hieronymus, Saint"—a method of entry which lays a trap for the unscholarly; "Ambrosius Sanctus (or Saint Ambrose)," which is much better; "Hilary of Poitiers, Saint," and "John of Salisbury" are given only in English; "Isidorus Hispalensis" only in Latin. "Goclenius, Rudolf" is a mixture of the Latinised and the German forms of his name. Of "Anselm" it is not even mentioned that he was an Italian. The name of "Averroës" is given with five spellings, but his Arabic name is inserted after "Averroism," as if "Ibn Roschd" translated that term. For "Arcesilaus" Arkesilaus is given as an alternative (which is neither Greek spelling nor Latin), but Arcesilas is not given. Under "Aristocles" there are two philosophers named, but not the greatest: there should have been a cross-reference to "Plato". "Kritias" appears only under K.; "Cratylus" and "Kratylus" (an inconsistent spelling) have separate articles with no indication that they are the same person; and "Kratylus" is described as the pupil of "Heraclitus," so that even the inconsistency of Grote's spelling is not carried out consistently. "Euclid" of Megara is not, perhaps, the form most familiar to English readers.

The brief biographical notices are sometimes exactly what is wanted. "Henry Home," with cross-reference from "Kames," may be mentioned as a model of what such an article should be in order to be very brief and yet "useful and reliable". It gives the absolute minimum of information which is indispensable to the student, *e.g.*, who finds "Home" mentioned in a German work on Æsthetics and may not have heard of an English writer of that name. The articles on "Baumgarten" and "Beattie" are also of the right kind. Under "Baumgarten" there should have been a cross-reference to the article "Æsthetics," where the history of that term is admirably given. The statements in the biographical articles are, however, not always careful. Thus we are told that Roger Bacon and Campanella were "monks". Thomas Spencer Baynes is said to have been "professor of logic at Edinburgh, 1851-55"—an inaccurate statement based probably

on his having been Hamilton's assistant. Under "Fichte" we find: "In 1799, charged with atheism, etc. . . . he resigned his position and withdrew to Berlin, where he became rector of the new University of Berlin". The unwary student would certainly infer from this sentence that the new University was founded in or before 1799; and he is left ignorant of Fichte's professoriate at Erlangen. Of Hume we are told that as Under-Secretary of State he "took charge of Scottish affairs, including the patronage of the churches". The last phrase is misleading. Hume would only have to do with any Crown living that fell vacant while General Conway was Secretary. If something piquant was wanted, it would have been more worth mentioning that St. David's Street in Edinburgh is named after him. The short notice of Ferdinand Lassalle, which does not mention *Herakleitos*, ends thus: "In 1856 he returned to Berlin and lived as a private scholar"—surely the queerest way of referring to the later career of the "thinker and fighter" who was an agitator even as a corpse. A sufficiently brief but more accurate ending would be: "Now the rest of the acts of Lassalle, are they not written in the Book of the Chronicles of Helene von Racowitza and in the *Tragic-Comedians* of George Meredith?"

If we turn now to articles of the class which bulks more largely in the volume and in the eyes of the Editor, "Anarchism," "Apperception," "Associationism," "Category," "Catharsis" (Aristotle's term in the *Poetics*), "Ethical Theories," "Idealism" —articles on very different subjects and by different authors, may serve as specimens of admirable work: they are not too long and give in clear and careful language just the kind of information which a student might reasonably expect to find in a Dictionary of Philosophy, and they carry out the promise of the "Preface" —"to state formulated and well-defined results rather than to present discussions". The articles on logical subjects seem particularly good. Many of them have the signature "R. A."; and to look through them now increases our feelings of the great loss sustained by philosophy and learning through the untimely death of Prof. Adamson. If the logical articles err, it is generally by being just too brief. Thus under "Conversion" the difference between the use of the term "Converse" in logic and in geometry should have been noted. Under "Deduction" we might have expected a reference to Kant's use of the word, in its legal sense —if only to prevent confusion with its logical meaning. (In Prof. Royce's long and admirable article on "Kant's Terminology" I have not noticed any special reference to the word.) "Enthymeme" should not have been derived directly from ἐν and θυμός— a false etymology which countenances the absurdly unscientific and un-Aristotelian use of the term in later writers. In the article it is said that Aristotle's "expressions or illustrations lend themselves readily to that interpretation" (that the enthymeme is an incompletely *expressed* syllogism). In *Anal. Pr.*, ii., 27, 70, *a* 19,

Aristotle notes that in the example given of an Enthymeme in figure iii., one premise is not uttered; but those who lay stress on this seem to have overlooked the fact that in *Rhet.*, i., 2, 1357, *b* 12, the corresponding example is given with both premises expressed. In "*Experimentum crucis*" the word *crux* is not explained, and no reference is made to Bacon's own phrase, which was "*instantia crucis*"; on this there is no article nor on the word "*instantia*" at all. Under the names of the various moods (*Barbara*, etc.) we are referred to article "Mood"; but *Baralipton* is omitted, and the reference *s.v. Dimaris* should be directly to "Mood," and not to "*Dibatis*". In "Division," "*infima species*" is a misprint for "*infimae*". In article "Genus" (portion by Dr. C. S. Peirce) it is said that the Aristotelian rule against cross-division "is signally violated in the modern classifications of chemistry, mathematics, and logic itself". This statement is not explained. "One of the Aristotelian rules of DIVISION (*q.v.*) in logic is that *the differences of different genera are different*, that is to say, cross-divisions are not to be made." Nothing to support the words I have italicised will be found in the article "Division"; and they seem to involve some misunderstanding of the rule against "cross-division". They may admit of justification; but they are likely to confuse the student.

The etymologies of philosophical terms are often given in a misleading manner. Thus terms which come directly from genuine Greek words, *e.g.*, "Apocalypse," "Aristocracy," "Democracy," "Chrysalis" should not have their etymologies treated in the same way as if they were modern "scientific" inventions like "Biology," "Demography," "Blastoderm," etc. "Apodictic," on the other hand, has rightly had ἀποδεικτικός given as its original; but the descent of that from ἀπόδειξις should have been mentioned (as there is no article on that word). After the word "Fall" the Greek σφάλλειν is inserted in brackets—as if the Saxon word came from the Greek! In the article "Anthropology" we find the remark that "the term was used by Aristotle, but somewhat inexactly". Bonitz only gives the word ἀνθρωπόλογος in *Eth. Nic.*, iv., where it is said that the magnanimous man (like Wordsworth) does not delight in "personal talk"! In the article "Autocracy" surely something has dropped out. The word in Russian characters is "Imperator," which is not Greek, though it may have come *through* Byzantine Greek. Under "Heaven" we find "etymology uncertain: possibly *Lat. camera*, a chamber, or *capere*, to hold"—a mysterious entry. Can it have originated in some German dictionary where *Himmel* has been derived, not certainly from *Lat. camera*, but from the same root as *camera?* But then it still remains to be shown that *Himmel* and *heaven* are the same word; this *The New English Dictionary* regards as not proved, and it seems very improbable.

The cross-references seem often oddly arranged. Thus under "Geulincx," after the briefest note, we are referred to "Cartesianism" and "Occasionalism". Under "Cartesianism" we are

simply referred to "Pre-established Harmony" and "Occasionalism". Under "Descartes," after a brief note, we find: "See Mind and Body, Occasionalism and Pre-established Harmony". The final result may be excellent, when we have it; but it seems strange to refer the inquirer after Descartes' philosophy to articles on theories which were not his. Under "Damnation (eternal)" we find: "See Judgment," and there we are referred to "Eschatology," where there is a brief article and a bibliographical note. Would it not be kinder to send the philosophical inquirer after "Damnation" straight to "Hell," which is fuller and more curious? It begins, "The place where lost sinners abide, suffering endless punishment, and keeping company with the devil and with devils". "The Greek Gehenna" is spoken of as if it was Greek in the same sense as "Hades" and "Tartarus". The article ends: "It is well to remember that, on all the matters discussed under this head, the most striking feature of Scripture is its silence. Consequently, philosophical discussion of the subject must be based more on the ideas of the destiny of mankind formulated at various periods and by various races than upon documentary evidence." One can only marvel what the writer understands by "philosophical discussion," when he thinks it worth while to write thus about "documentary evidence" in a Philosophical Dictionary.

There are articles on "Amulet," "Belgic Confession," "Confirmation" (the last clause in this article would naturally suggest that baptism in the Roman Church can only be administered by priests). There is an article on "Church and State"—too meagre both in itself and in its references to literature to be of use to the student. There is no article on "Civilisation." "History of Culture" (in article "Culture") is *not* the English for *Culturgeschichte*. Among the literature in article "Custom," Bagehot's *Physics and Politics* should have been included. It is referred to in "Group Selection". In "Eternity" there should have been a reference to Plato's *Timaeus*. In the article "Federation," *Bundesstaat* and *Staatenbund* are given as German equivalents, without any indication of the difference between them or of the attempt made by many English writers, following the historical usage of America, to employ "Confederation" for the looser form of composite state. In the article "Aristotle's Experiment" there should have been a reference to *Met.* Γ, 1011, *a* 33 as well as to *De Insomn.*

In the article "Beauty," *πρός τε καλά* is an easily corrected misprint, as is *καθ' αὐτό* in "Kant's Terminology". In "Dialectic" Mr. McTaggart's name is wrongly spelt. The English of some passages is not accurate or free from ambiguity. Thus in "Alcoholism" we read: "The study of alcoholism has an importance beyond its medical and psychological interest. It has contributed to much of the degradation of individuals and races, and the regulation of its use has been for generations one of the most

important sociological problems." In "Creationism" there is this sentence: "Creation by a single act or 'continuous' creation (by a series of acts), alike hold the theory of transcendence as opposed to that of complete immanence". In "Demonomania" there is this: "On the historic side, demon possession is important as a stage in the development of medical theory of disease, and as suggesting a rational explanation in terms of modern psychiatry of the actions and influences of abnormal individuals in former ages". In the article "Devil": "By the sixth century the personification is so complete that the devil is able to appear disguised as Christ, and to employ this ruse for the destruction of souls. Its persistence and domination is attested by the prosecutions for witchcraft, etc. . . . It is noticeable from the philosophical standpoint, that theology has always treated the devil from a psychological or ethical standpoint. The problem involved is really ontological, and as a consequence of philosophical criticism, coupled with the modern explanation of the myth by way of historical development, the idea is now without vital influence." Some revision of style is much needed here.

The article "Cause and Effect" begins as follows: "(1) Cause and effect are correlative terms denoting any two distinguishable things, phases or aspects of reality, which are so related to each other, that whenever the first ceases to exist, the second comes into existence immediately after, and whenever the second comes into existence, the first has ceased to exist immediately before". Is this definition applicable to "cause," either in its scientific or in its popular sense? It is admitted further on that in practice "the demands that a cause should immediately precede its effect, that it should cease to exist upon the occurrence of its effect, and that their relation should be absolutely invariable, are sacrificed". If the definition were adhered to, we should indeed be able to say that the guard's whistle caused the train to start, but we should not be able to say that the steam in the engine was the cause of the train moving—till the fire went out or the boiler burst. What has become of the good old maxim *Cessante causa, cessat effectus?* No allusion is made to it. In the same article it is said that the Pre-Socratic philosophers used the word ἀρχή—a statement which is extremely doubtful (see Burnet, *Early Greek Philosophy*, p. 52). It is also said that Hume "denied a necessary connexion, *i.e.*, the possibility of inference, between any two existent things". That Hume's denial of necessary connexion implicitly destroys the possibility of inference, may be a legitimate criticism. But neither Hume, nor Mill after him, thought that he had made inference (probable inference at least) impossible.

The elaborate essays by Prof. Royce on Greek, Hegelian, Kantian and Latin or Scholastic Terminology would deserve separate consideration. They seem the product of great learning and minute care. But may it not be questioned whether the convenience of the student is really served by this method

of treatment? Thus suppose a student comes across the word *formaliter* in a passage of Descartes or Spinoza, he looks up the word in the *Dictionary* and finds "See LATIN AND SCHOLASTIC TERMINOLOGY. Glossary sub verbis". In the Glossary (Why is an Index to a Glossary called a Glossary?) he is referred to §10, where the distinction between "formal" and "material" is explained. The Cartesian use, in distinction from *objective*, is explained in §13; but there is no reference to that section in the "Glossary" *s.v. formaliter:* and it takes some time to search through an article of more than ten pages in double columns. There is an article on the word *Eminenter*, but no reference is there made to *formaliter*. The Greek term *οὐρανός*, as used by the early philosophers, is not explained in the article on Greek Terminology It is not in "Heaven," where it should have been referred to. It is rightly referred to in "Cosmos". The word *ἀρχή* is not in the Glossary of "Greek Terminology". There is an article "Arche": "Aristotle's term for first principle or source, in the sense of formal and final CAUSE (*q.v.*), in his scheme of causes"—a curious article, for it seems to exclude the *ἀρχὴ κινήσεως* as well as the material cause. There is a brief article on *Aseitas* (a word not apparently mentioned in the article on Latin Terminology) and one on *Haecceitas* with a reference to "Latin Terminology," where it may be found by the help of the Glossary. The article on Hegel's Terminology appears only to include the terms of his Logic. There is nothing on such terms as *Recht*, *Moralität*, *Sittlichkeit*, *Bürgerliche Gesellschaft;* but of course these may not be regarded as so distinctively Hegelian.

These are some of the matters which have been noted by one person using the Dictionary during a short time only. The general impression left is that, along with a great number of excellent and business-like articles, there are many which need a good deal of revision. Criticism has been made with fear and trembling; for the Editor warns us that "there is hardly anything in the work which has not the support of a group of men of the highest authority. This should be remembered by the single writer or student who finds this or that point unsatisfactory. He is one; we are many" (p. xi.). I sincerely trust that some of the statements I have quoted have not the support of a group of men of the highest authority, but are simply due to some inadvertence. In any case, however, while counting heads instead of breaking them may be a defensible expedient in political matters, in philosophy and and scholarship the only resource is to break heads—dialectically—when it seems necessary, even if they are the heads of *φίλοι ἄνδρες· ἀμφοῖν γὰρ ὄντοιν φίλοιν ὅσιον προτιμᾶν τὴν ἀλήθειαν.*

D. G. RITCHIE.

The World and the Individual. Second Series. "Nature, Man, and the Moral Order." By JOSIAH ROYCE, Ph.D., LL.D., Professor of the History of Philosophy in Harvard University. (Aberdeen Gifford Lectures.) New York: Macmillan, 1901. Pp. xvii., 480.

THIS volume, the author tells us, is more practical in its aim than its predecessor. "The previous discussion dealt with the Theory of Being; the aim of what is to come shall be a doctrine about Life" (p. 4). The first Lecture, "The Recognition of Facts," after some admirable remarks on the relation of philosophy to life, recapitulates the view taken in the First Series, that "what we experience is, in one aspect, always our own will to be compelled by facts" (p. 30). It is no doubt the case, as Dr. Royce points out, that we can never be out of harmony with facts except in so far as our own nature leads us to postulate something inconsistent with them. But it appears from the fuller statement previously given (*cf.* First Series, pp. 389, 390) that Dr. Royce finds in this a ground for a belief in an ultimate and supreme harmony between our will and reality. And this does not seem a legitimate inference. If my will had no relation to the facts before me, I could not be dissatisfied. But it does not follow from this that my will will ever be in that special relation to the facts which produces satisfaction.

The second Lecture is entitled "The Linkage of Facts". Here we deal with the distinction between the World of Description and the World of Appreciation. The World of Description is that which we form when we view facts "as if the only purpose which they could fulfil was the purpose of being discriminable" (p. 98). This world also is "anybody's world". From whatever individual standpoint we may start, we shall come to the same result (p. 99). And it is therefore "abstract and inadequate" (p. 101).

"The true world," on the other hand, "the World of Values or of Appreciation, as rightly viewed by an absolute insight, would be a world of Selves, forming in the unity of their systems One Self" (p. 106). And its unity "determines not merely what is the same from many points of view, but what is uniquely present, once for all, from the divine point of view, as the one true Order of things" (p. 102).

The distinction here indicated is, no doubt, of great importance. But Dr. Royce's terminology tends to suggest an absolute gulf where, as it seems to me, there is in reality a continuous development. Between the abstract universality of mathematics and the full individuality recognised, if not completely expounded, by such a philosophy as Dr. Royce's, or Hegel's, there surely lie many stages which give gradually increasing recognition to individuality. And "the one true Order of things," while it is certainly more than "what is the same from many points of view," is not so

much a fresh conception as a higher form of the same conception.

The rest of the lecture is largely occupied by the development of the view that the "best single word for expressing what is essential to a lawful order in the world of facts is the term Series" (p. 72). In the World of Appreciation the series are such that "every fact has its next-following fact". In the World of Description, on the other hand, a fresh fact can always be inserted between any two facts—or when this is not empirically possible, we postulate the intermediaries we cannot observe (pp. 98, 107).

All order may no doubt be expressed as a Series. But is it worth while to do so? Everything which makes a conception of order adequate or inadequate as an expression of reality is left untouched by such an expression. If reality is conceived as a mechanical aggregate, or as an organism, or as the *Civitas Dei*, it could be said to form a series. But the important point is to know what relations are predicated, in each case, between the points forming the series, and it is just this which the conception of series ignores—as is natural with a conception taken originally from mathematics.

The third Lecture deals with the Temporal and the Eternal. Dr. Royce first expounds the conception of the Specious Present, as applied to the consciousness of finite individuals. The lives of finite beings, he tells us, must be considered as being in a temporal order, because every finite being is striving towards an Other, which involves time (p. 134). Nevertheless, the Other towards which such a being strives is the whole of which the striving being is a part, and this leads on to the assertion that "this same temporal whole is, when regarded in its wholeness, an Eternal order. And I mean by this assertion nothing whatever, but that the whole real content of this temporal order, whether it is viewed from any one temporal instant as past or as present or as future, is at once known, *i.e.*, is consciously experienced as a whole by the Absolute. And I use this expression *at once* in the very sense in which we before used it when we pointed out that to your own consciousness, the whole musical phrase may be and often is known at once, despite the fact that each member of the musical succession, when taken as the temporally present one, excludes from its own temporal instant the other members of the sequence, so that they are either no longer or not yet, at the instant when this element is temporally the present one" (p. 138).

An adequate discussion of this most interesting theory is impossible here. I wish only to make two comments. The first is that the Specious Present of the Absolute contains the future as well as the past, in opposition to the view held by Mr. Bradley, by which "the 'now' contains merely the process of present turning into past" (*Appearance and Reality*, p. 41).

The second point is that this view really asserts the absolute

validity of Time, and leaves no place for Eternity at all. If I understood Dr. Royce rightly, he holds that even for the Absolute the distinction of past, present, and future really exists. Even from the standard of the Absolute, therefore, some events are no longer, and others not yet. It is true that the Absolute is directly conscious of what is no longer and what is not yet. But that does not make them real at the moment at which the Absolute is conscious of them—for then they would respectively still be, and already be, which Dr. Royce has denied to be the case. What then is eternal? Nothing but events, apparently, since Dr. Royce speaks of nothing else. But not the events of which the Absolute is conscious, for the reasons I have just given. Not, finally, the event of the Absolute's consciousness. For that must change every moment, since every moment it regards as present something which it had previously regarded as future, and regards as past something which it had, in the previous moment, regarded as present.

Lecture IV. ("Physical and Social Reality") contains a very interesting study of the social element in our view of nature, which is summed up in the assertion that "the so-called axiom of the unvarying character of the laws of nature is no self-evident truth, is not even at once an empirically established and a universal generalisation, and possesses its present authority because of the emphasis that our social interests give to the discovery of uniform laws where we can discover them" (p. 195).

If among our "social interests" be included our interest in understanding the universe, it is no doubt true that, in so far as we do not attempt to understand the universe, we do not need the axiom of the uniformity of nature. But this would also be the case with every other truth, including the law of contradiction, and Dr. Royce certainly does not hold that all truth depends on our social interests in the way in which the uniformity of nature depends on them.

If "social interests" is taken in a narrower sense, I do not think the proposition can be maintained. No doubt the world would be inconvenient if there were no uniform laws to be found in it. But would that be all. Would it not also be contradictory? And then the uniformity of nature can scarcely be said to be a merely social interest. That uniformity is not the whole truth, and is therefore not quite true. But an approximation to the truth is not quite the same as a merely practical expedient.

Lecture V. deals with the Interpretation of Nature. Dr. Royce points out that the laws of reversible processes are valid only for Matter as such. "But the other laws, the laws of the irreversible processes, are, in their most general type, common to Matter and Mind, to the physical and the moral world" (p. 218). To these latter much greater importance is to be attached. "We know that Nature, as it were, *tolerates* our mathematical formulas. We do not know that she would not equally well tolerate many other such

formulas instead of these. But we do know, meanwhile, that the processes called by us growth and decay are facts as genuinely real as any natural facts whatever" (p. 225).

This is followed by the development of a theory which seems to me to be of great novelty and importance. Those systems which hold that all centres of reality must be conscious beings have generally considerable difficulty in explaining the finite centres of reality behind that inorganic nature which behaves so differently from our bodies. Dr. Royce suggests that "the actually fluent inner experience, which our hypothesis attributes to inorganic Nature would be a finite experience of an extremely august temporal span, so that a material region of the inorganic world would be to us the phenomenal sign of the presence of at least one fellow creature who took, perhaps, a billion years to complete a moment of his consciousness, so that where we saw, in the signs given us of his presence, only monotonous permanence of fact, he, in his inner life, found momentarily significant change (p. 228). "If . . . personal individuality is an essentially ethical category, then a new person exists whenever, within a conscious process of a given time-span, intercommunication with the rest of Nature results in the appearance of processes significant enough to express themselves in new ideals, and in a new unification of experience in terms of these ideals" (p. 229).

"Meanwhile, our hypothesis supposes that, in the case of the animals, we may well be dealing not with beings who are rational in our own time-span, nor yet with beings who are irrational. The rational being with whom you deal when you observe an animal's dimmer hints of rationality, may be phenomenally represented rather by the race as a whole than by any one individual. In that case, this individual animal is no rational person, but he may well be, so to speak, a temporally brief section of a person, whose time-span of consciousness is far longer than ours" (p. 232).

The next two lectures are devoted to the doctrine of the Self. Dr. Royce reminds us of the distinction drawn in the previous volume between Internal and External meaning, and declares that primarily "the contrast of Self and not-Self comes to us as the contrast between the Internal and the External meaning of this present moment's purpose" (p. 272). The significance of the Self is teleological. "By this meaning of my life-plan, by this possession of an ideal, by this Intent always to remain another than my fellows despite my divinely planned unity with them—by this, and not by the possession of any Soul-Substance, I am defined and created a Self" (p. 276). And again, "in our present form of human consciousness, the true Self of any individual man is not a datum, but an ideal" (p. 287).

This is followed by an attempt to show how a part of a Self may, in time, assume a separate Selfhood, which it did not previously possess. It would seem that the new Self may remain a part of the original larger Self, or (if I understand the theory

rightly) may become independent of that original Self. I must confess that I entirely fail in attaching any meaning to the inclusion of one Self in another, or to the transformation into a Self of something which previously was not one. Nor do I see how Dr. Royce can be so confident as he apparently is that the genesis of the Self in time is not inconsistent with its immortality when produced. Even if, as he says, all facts have teleological relations with the Absolute (p. 322) how are we, on such a theory, to be convinced that the end of each finite Self is not to efface itself and vanish as a means to something else?

Lecture VIII. deals with the Moral Order. The following sentences seem to give the fundamental aspects of the doctrine put forward. "To seek anything but the Absolute itself is, indeed, even for the most perverse Self, simply impossible. All life is looking for God, however base the forms of idolatry beneath which the false love of the world may ignorantly hide its own meaning, at any one temporal instant" (p. 347). "The Self may seek its self-expression explicitly in the form of rebellion. Nor is such a rebellious attitude by any means wholly evil. Conscious choice of a total evil is, indeed, impossible. For the Self, at its worst, seeks finality of self-expression, and seeks this self-expression through a life that is at once Other than its present Internal meaning, and perfected in its form and content. . . . As a fact I can only assert my finite Self by transforming myself; so that I actually obey, in some measure, even while I rebel. For the finite Self cannot seek its own, without passing over into new life. And there is self-sacrifice involved in even the most stubborn rebellion; and courage and endurance are exercised, unwillingly, even by the most cowardly of pleasure-seekers" (pp. 349, 350). "Now once considering the individual as acting in time, what you have a right to say to him is, that, if he intends evil results, . . . then, just in so far as he succeeds in carrying out his end, he produces what, at just that point of time, is indeed an actual evil" (p. 362). "Every evil deed must somewhere and at some time be atoned for, by some other than the agent, if not by the agent himself" (p. 368).

I take the position to be this—moral evil has an eternal significance, but in its eternal significance it is so transcended that it is no longer evil. But, *sub specie temporis*, it is evil, as opposed to good, and must be atoned for before it is left behind. By such a view we combine the assertion that the universe is fundamentally good with a recognition of the phenomenal reality of evil which is quite sufficient for practical purposes—the only purposes for which we need be anxious to assert its reality. The theory and its exposition both seem to me to be admirable. My only doubt is as to the adequacy of Dr. Royce's conception of Eternity for such a purpose. Would not something more mystical and less temporal than an all-embracing Specious Present be required before the evilness of evil could be transcended?

"The Struggle with Evil" forms the subject of the ninth Lecture. "Every ill of human fortune is, presumably, either directly due to the magnitude and ideality of our finite plans, or else is more or less directly the expression of the morally defective intent of some human or extra-human moral agent, or of the inadequacy of such an agent to his own ideals" (pp. 387, 388). I would suggest that these are not so much alternatives as joint factors, both of which must be present in all cases. The evil fortune of any being must imply both an ideal which the facts hinder him from carrying out, and the facts which hinder him from carrying out the ideal.

This is followed by an admirable criticism of the forensic view of morals, which asserts that a man is only corrupted by his own sin, and ought only to suffer for his own sin. "In a sense the sin of every evil-doer among us taints all of us" (p. 389). And, again, the denial that any real evil falls on any man, except on account of the sins he has freely committed, reduces all attempts to help others to an absurdity (*cf.* pp. 402, 404).

The Lecture closes with an assertion that "our sorrows are identically God's own sorrows" (p. 408), and that "unless God knows sorrow, he knows not the highest good, which consists in the overcoming of sorrow" (p. 410). This supports my doubt as to the sufficiency of the Eternity ascribed to God by Dr. Royce for the purpose of completely transcending evil. And yet we have been told that the Absolute "transcends" evil (p. 396). Again God's Eternity is an all-embracing Specious Present. Therefore the evil, like everything else, is eternally present to him. If it is present *as* evil, and not as transcended and transmuted into what is not evil, how can he be said to have overcome it, or how can reality be held to be, *sub specie æternitatis*, completely good?

The Union of God and Man forms the subject of the last lecture. The most important part of this lecture deals with Immortality. "The same considerations," we are told, "which imply the intimate union of every temporal instant's passing striving with the whole life of God, equally imply that an individual task which is ideal, which is unique, and which means the service of God in a series of deeds such as can never end without an essential failure of the task, can only be linked with God's life, and can only find its completion in this union with God, in an individual life which is the life of a conscious Self, and which is a deathless life" (p. 430).

This seems to me to be more than Dr. Royce is, on his own principles, entitled to assert. Every finite Self is included within the infinite Self, in a manner which apparently is analogous to the way in which different conscious moments are included within each finite Self. What guarantee have we that the different finite Selves are not transitory episodes in the infinite Self in the sense in which a particular mood, or a particular effort are transitory episodes in my finite Self? Each finite Self is, no doubt, unique. But the "passing striving" of each temporal instant is also unique,

and yet it passes. It is true, also,—at least on Dr. Royce's principles—that every moral task, when completed, gives birth to a fresh task. But I do not see that Dr. Royce has proved that the new task is a task for the same Self as the one who performed the previous task. And without this, the endless succession of tasks would be compatible with the transitoriness of all finite Selves.

This volume will satisfy even the high expectations which were raised by the First Series. If Idealists in general can combine the old courage with new caution so admirably as Dr. Royce does, they will have learnt a lesson which will be of great value to themselves and the world.

J. ELLIS MCTAGGART.

Principles of Western Civilisation: By BENJAMIN KIDD. London: Macmillan & Co., Limited. New York: The Macmillan Company, 1902. Price 15s. net.

MR. KIDD has endeavoured to write a very remarkable book, and he had succeeded in producing one which will attract attention. His aim has been nothing short of a new philosophy of history; and though there may be nothing in his work which will give it a claim to a place among philosophical classics, it is sufficiently stimulating in quality and bold in conception to arouse discussion and reflexion even outside philosophic circles. It handles in a broad and synoptic manner many of the profoundest, and some of the most insoluble, problems; it contains many just reflexions, many effective passages of rhetoric, and some which reveal insight: above all it is penetrated with a manifest seriousness and sincerity of purpose. It is essentially a book for edification. In the judgment of the more critical among its readers its chief defect will be found to lie in want of clearness—clearness both in thought and in style. It has been Mr. Kidd's misfortune to have served no apprenticeship in any school of exact and rigorous thinking; he has never submitted his postulates and working conceptions to an insistent elenchus. Too often he seems to be feeling after a thought, and satisfying himself with a formula; too often his language is of that impressionist type which indicates a mood of aspiration rather than a process of reasoning. If Mr. Kidd could be persuaded to devote more attention to perspicuity of diction much that is obscure in his thought would tend to disappear. Loose writing and loose thinking are inseparable allies.

The argument of the book opens with a severe exposure and a confident correction of the errors of Darwin, from whom Mr. Kidd attempts to extort a confession of the doctrine that in "the operation of the principle of Natural Selection the centre of significance is always in the present time" (p. 40), *i.e.* that the law should be regarded "simply in its relation to the interests of the individuals

taking part in the struggle for existence as it went on at any particular time" (p. 41). (Whether the Darwinian point of view is really obnoxious to this criticism we have not now to consider.) Next from a study of Prof. Weismann's essays Mr. Kidd has learnt that nature's tendency is, other things being equal, rather to shorten the duration of life. But how can a Natural Selection which is hostile to "so ultimate and fundamental a matter as the average duration of life in the individual" be conceived as working for and through "the benefit of the individual . . . in a mere struggle for existence in the present"? (pp. 48, 49). Has not Mr. Herbert Spencer demanded, as the goal of social evolution, that the lives of all should be "the greatest possible alike in length and breadth"? Mr. Kidd has only omitted to note one consideration —but from his own point of view one which is essential. The "Self-realisation" of the individual is not to be measured in time but in value. Fulness and completeness of life stand in no necessary ratio to the increase of longevity.

Mr. Kidd's own view, then, is of "entire species and types, unconsciously pitted against each other for long ages in a struggle in which efficiency *in the future* is the determining quality" (p. 51). Now, granting that Mr. Kidd has here succeeded in removing himself from the Darwinian standpoint—a standpoint necessarily occupied by the scientific observer—can he explain how Natural Selection can select except by taking advantage "of such variations as arise and are beneficial to each creature under its complex relations of life" (*Origin of Species*)? Natural selection can only determine the future by eliminating the unfit and suffering the fittest to survive. Yes! replies Mr. Kidd, but fit and unfit for what, if not for fulfilling the hidden purposes of the future? It is the future which, in fact, controls Natural Selection, not Natural Selection which determines the future. To which an opponent still unconvinced can only retort: While I remain loyal to facts I can prove that Natural Selection determines the future of the species, but neither I, nor any one else, can do more than guess that any purpose to be revealed in the future controls the operation of Natural Selection. *This* individual copes with its environment, survives, and propagates; *that* fails and perishes, a barren life. It is only popular instinct which confuses result with purpose. The only argument which Mr. Kidd has to offer for his principle of "projected efficiency" is one so singular that we quote it in his own words, lest we fail to do it justice. "It is evident that the very essence of the principle (of Natural Selection) is that it must act in the manner in which it produces the most effective results. It must act through the medium of the largest numbers. The qualities in favour of which it must, in the long run, consistently discriminate are those which most effectively subserve the interests of the largest majority. Yet this majority in the processes of life can never be in the present. It is always, of necessity, the majority which constitutes the long roll of the yet unborn generations"

(pp. 42, 43). Truly, a remarkable application of the doctrine of the right of the majority! There is, indeed, one real argument in defence of Mr. Kidd's position, and that is a theological one. Let him plainly write "God" for "the control of the future" or "projected efficiency," and the doctrine will assume a more intelligible if a less paradoxical shape.

The bulk of the book is occupied with a review of the phases of Western Civilisation in the light of this new formula. Himself profoundly convinced of the momentous significance of the truth of evolution, and the reconsideration of all political and social questions which it entails, he divides history into two grand epochs —the first, the epoch of the "ascendency of the present," characterised by "the supremacy of the causes which are contributing to social efficiency by subordinating the individual merely to the existing political organisation" (p. 140), the second the epoch of "the control of the future," *i.e.* of the supremacy of those causes, "which contribute to a higher type of social efficiency by subordinating society itself with all its interests in the present to its own future" (p. 142). This leads him to seize and apply the antithesis between "the 'State' considered as an organisation of existing individuals, and 'Society' in process of evolution, considered as an aggregate of individuals in whose welfare these existing individuals have simply not the slightest interest" (p. 69) with a relentless and rather undiscriminating hand. It leads him to restate the fundamental formula of progress as one of gradual emancipation from the ascendency of the present to a frank and conscious surrender to the control of the future. It would appear that Western Humanity is by way of completing its transfer of allegiance. Already in politics, thought and religion a principle of tolerance, which "can only be held in the last resort as a conviction of the consciousness," marks, among the advanced peoples, the control of the future, and reveals to Mr. Kidd "the great drama in which the tyranny of the present is being lifted, for the first time in the world's history, from the shoulders of the human race" (p. 386). But in the economic process in our time "the ascendency of the present" is "a world-embracing fact," and the writer closes his work by an appeal to the State (p. 469) or the general will (p. 462), consciously acting under a sense of responsibility to transcendent principles, to organise and direct the progress of industry towards an era of equal economic opportunity. Thus, and thus only, may be established that universal empire towards which our civilisation moves, "that empire in which it has become the destiny of our Western Demos, in full consciousness of the nature of the majestic process of cosmic ethics that has engendered him, to project the controlling meaning of the world-process beyond the present" (p. 473).

There is no call to criticise in detail the value and accuracy of Mr. Kidd's presentation of Western history. It is sufficient to say that when history passes into the service of the philosopher

of history it generally suffers grievous wrong, and that Mr. Kidd's treatment is no exception to the rule. But it is more distressing to find the writer, obsessed with his formula, so persistently failing to grasp the historical motive and significance of the thinkers he cites in the course of his argument. It would seem, indeed, that he can have studied very few of them in their actual relation to the needs and theories of their own times. This is a serious charge; did space permit we should be ready to substantiate it. Still, a philosophy of history may exhibit luminous intuitions and contain elements of real value apart from the authorities it cites and the historical experience which it professes to interpret. The question is not so much of the merits or defects of Mr. Kidd's application of his formula as of the value of the formula itself. And to adjudicate on its value it is necessary to fix its meaning. We gather that the "present" which has been ascendant through the far greater tract of past history always implies opposition to some sort of development, and we are bound to infer that man is endowed with a perverse gift of resisting the progress for which he is destined. We are directed to discover the ascendency of the present in all those societies in which social efficiency is intimately dependent on military efficiency (pp. 140, 141). It is "this principle of the ascendency of the present which carries the inquirer into the inner meaning of every detail of the life of the ancient civilisations" (p. 189)—"civilisations in which the purposes of the State included the whole life and interests of the individual—material, moral, and religious" (p. 20). The ascendency of the present animates the radical notion of political finality (p. 17). In Mill's conception of progress it is the ideal of the ascendant present in a stationary state which is set before us as the *Summum bonum* in political development" (p. 120). It is the ascendency of the present which rules in the speculations of Voltaire, Condillac, Helvetius, Diderot, D'Alembert, Rousseau, Hegel, Bentham, Austin, James Mill, Stewart, Malthus, Grote, Ricardo, Huxley, Spencer and Darwin (the list is not exhaustive). The principles of the Manchester School are "the characteristic vehicle through which the present has endeavoured to express its ascendency in the modern political drama of our civilisation" (p. 23). Nay, even the recognition of the economic factor in history seems to connote the sway of selfish interests, for Mr. Kidd, if we understand him aright, refuses to distinguish between an economic interpretation of history and the ascendency of materialistic motives. Where the manifestations are so many and heterogeneous the underlying principle of the ascendency of the present, whatever it may be, eludes definition and consequently lies quite outside the province of criticism. On the other hand "the control of the future" offers to criticism no surer foothold. It is, of necessity, the antithesis to the ascendency of the present, and it signalises its sway by engendering "a sense of direct, personal, and compelling responsibility to a principle cosmic in its reach—to a principle which must of necessity transcend every

power and purpose included within the limits of political consciousness" (p. 252). But what is this controlling future? Is it a person, or a process, or a force? Mr. Kidd assumes throughout—a tremendous assumption for which he offers neither apology nor proof—that evolution must be justified of her children. Indeed, apology and proof would be alike presumptuous, for the future, and the future alone, knows what she would be at. Evolution acts never for the sake of the present, always for the sake of the future. If Mr. Kidd is really serious in his proposition, then evolution acts for no end at all. If, on the other hand, as he would probably admit, evolution does make for some goal, why should those be condemned as wanting in faith or wits who seek, however imperfectly, to understand it, or impious who take a hand in the game? For to Mr. Kidd an intelligible ideal is an ideal condemned; it signifies the ascendency of the present. He calls upon the awakened consciousness to identify itself consciously with a meaning of which, *ex hypothesi*, it can never be conscious, upon the will to render devoted obedience to a movement to which it is bound by neither interest nor understanding. The principle by whose aid Mr. Kidd has endeavoured to thread his way through the maze of Western history is fruitful neither for interpretation, nor for guidance, nor for prophecy. It was in an unfortunate hour that he selected a time formula wherein to vest a doctrine of transcendental obligation.

W. G. POGSON SMITH.

Contributions to a Psychological Theory of Music. By MAX MEYER, Professor of Experimental Psychology, University of Missouri.

PROF. MEYER introduces his theory by insisting very strongly that "the most important group of musical facts is the one referred to by the scientific term 'melody,'" and if for this only his paper deserves attention. For as he points out "Melody, the essential part of music, does not seem to exist for the theorist," the theory of music to the musician and even to the psychologist has hitherto meant almost exclusively the theory of Harmony. And though a theory of melody might not add to the pleasure of hearing music, and could hardly be expected to aid in composing it, such a theory would be of the greatest interest, to the psychologist if not to the musician. After this excellent opening, however, Prof. Meyer in his introduction indulges in some rather discursive criticisms on existing theories; of which it is not quite easy to catch the drift until one has read his later chapters. And even then it seems to me that Prof. Meyer himself does not quite realise what the crucial point of his theory is. The introduction of the number 7 as expressing a melodic relation is in reality merely con-

sequential on his theory of the tonic—a theory which in many respects bears a close relation to the Tonic Sol-fa method, and which might, I think with advantage, be brought into yet more close relation with it.

Prof. Meyer commences his exposition, in chapter i. by explaining what he means by saying that there is a relationship between two tones, or that two tones form a melody, when heard successively. He appeals to experience to prove that such a relationship does not exist between tones, the ratio of whose vibrations involves primes higher than 7; but he asserts that in the case of 7, say the ratio 5 : 7 a relationship can be observed. It does not, unfortunately, appear from Prof. Meyer's paper that he has tried his experiments on any large number of unbiassed observers, and the fact in question is hardly sufficiently established as yet to form by itself the basis of a new theory; for even if accepted it would not necessarily involve more than slight modifications of existing theories. But there is another premiss which Prof. Meyer lays down, whose significance is not at first sight so obvious, but which upon examination proves to be the crux of the whole theory. He says, "when one of two related tones is a pure power of 2, we wish to have this tone at the end of our succession of related tones, our melody"; and he proceeds to speak of this tone as the 'tonic'. Now this statement contains really two propositions, namely (*a*) that, 'save in a few instances where a peculiar psychological effect is aimed at,' there is a certain tone in every melody upon which alone it is satisfactory for the melody to end; and (*b*) that this note may be represented by a pure power of 2. Probably every one who has a 'musical ear' will understand proposition (*a*) and admit its general truth. The conception of a tonic is common to all modern musical theories, and this property of a tonic may perhaps be accepted as defining it. To understand proposition (*b*) we must remember, in the first place, that the numbers representing notes are not the absolute numbers of vibrations, but only proportional to them; and in the second place that Prof. Meyer takes no account of 2 as a factor; so that when he represents a tone by 2 (or, which he might do equally well, by 1) he means that the number of vibrations in it is a common measure of the numbers in all the other notes of the melody (multiplied only by a power of 2).

Prof. Meyer then goes on to classify the degrees of relationship between various pairs of tones. In doing so, since he takes no account of the factor 2, he of course classes fourths and fifths, thirds and sixths, and so on, together. He arranges them roughly in three groups. The first degree of relationship includes octaves, fourths, fifths and normal major and minor thirds (2-2, 2-3, 2-5, 3-5), the second degree an abnormal minor third (3-7) and seconds (2-7 and 2-9). In the third degree he places a semi-tone (2-15), another form of second (5-9) and the interval (5-7), which would be a diminished fifth on the piano as nearly as possible.

In chapter ii. Prof. Meyer discusses the complete musical scale, which is "a series of all tones which may occur in one melody, however complex this may be". It is, in fact, a table of all the products of the primes 2, 3, 5 and 7, and of their powers, arranged in columns by powers of 2, and divided by horizontal lines into twelve groups, corresponding roughly to the twelve notes of the ordinary scale. The table, however, not only stops at the tenth power of 2, but he has not included in it powers of 5 above the third, or of 7 above the first. Prof. Meyer gives as his reason for these omissions that he has "found no case where the higher powers of 5 and 7 are used," though he says the reader may add them if he pleases. I shall return to this point later on.

In order to put his theories to the test Prof. Meyer had an organ constructed whose reeds were exactly tuned to give all the notes on his complete scale between 64 and 1024 (absolute vibrations per second), and on this organ he played his melodies, choosing from among the possible alternatives that intonation which it seemed probable the composer had in his mind, and which gave the best æsthetic effect. 'Usually,' he tells us, 'one finds only *one* intonation of the whole melody which he feels inclined to attribute to the genius of a great composer.' In other words, one is able as a rule to determine with tolerable certainty what exact musical relationships constituted the composer's ideal. But in some cases there are two or more possible intonations which appear equally, or almost equally, effective. In such cases it is permissible to suppose that some people might prefer one and some the other interpretation; and it is, therefore, to be regretted that Prof. Meyer has not recorded for us the opinions of a larger number of observers, especially as these doubtful cases are just those which are of greatest theoretical interest.

I am unable to say much in the way of criticism of the illustrations which are given in the next three chapters, as I have not Prof. Meyer's instrument on which to test them myself. But there is one point of interest which I may note. Many of the illustrations are what he calls melodies 'without a tonic'. Musicians would probably agree readily enough that these melodies do not end on the tonic; but there is another peculiarity in Prof. Meyer's analysis of these melodies which seems to me (though I may be wrong) in some cases at all events to be the effect rather than the cause of his view that "no melody *that contains* 2 can end with any tone but 2". I cannot help surmising that this may explain why, notably in examples 9 and 10, he represents the note I should have called 2 (or 64) by 63. In the example from Lohengrin especially I feel convinced that the note he calls 63 is the tonic.

In the later chapters we are given some remarks on harmony, among which I may particularly notice an explanation of the fact that a certain highly trained choir always sang flat towards the end of a certain chorus—by Heinrich Schütz. This explana-

tion is too long to be reproduced here in full, but it seems to me altogether admirable, and has done more than anything else in the paper to convince me of the value of the theory, for it shows in a convincing manner the importance of melodic, as opposed to harmonic, relationships to a psychological theory of music. Briefly the explanation is this—that each singer accepts the next note he has to sing as related melodically to what he himself has just sung, rather than harmonically to what the others are singing, though the harmonic relationships cause subsequent modifications, which may be made by the wrong part. So that, for example, a singer who had been singing a note represented by 80 in one chord, continued the same note in the next, when he should have sung 81, and the other singers then sang flat to keep in tune with him.

This outline will I hope be sufficient to render a few words of general criticism intelligible. In the first place, I cannot help thinking Prof. Meyer has fallen into some confusion in making the question whether a melody can or 'can not end with any tone but' the tonic, depend upon whether the tonic happens to occur in the melody or not. Although in all Prof. Meyer's illustrations of melodies which do not end on the tonic, the note represented by 2 is absent, in some at least of them this result has been attained by representing a note by 63 instead of 64 (or 2) and it may be that every one would not agree that 63 gave the better æsthetic effect. Prof. Meyer tells us in one case (example 9) that musicians have actually harmonised the melody "as if 63 were a tonic, identified with 64"; though it is of course possible that they would not have done so if they had had the advantage of a perfectly tuned instrument like Prof. Meyer's on which to test the effect. But in any case, to apprehend a succession of tones as a melody is, psychologically, to apprehend relationships which imply the relation of each note to a tonic, just as on the physical side to represent the notes by numbers having simple numerical ratios is to imply a number which is the greatest common measure of all. Personally I may have been influenced by a few lessons I had in the Tonic Sol-fa method when I was a child. If I apprehend even two notes, such as a cuckoo's call, as a melody, I instinctively give names to them, such as 'soh-me' or 'doh-lah' (the two are not by any means the same to me). But any one with a musical ear, and any sort of musical training, would have no difficulty in imagining, or singing, the tonic to which he mentally referred the notes, whether it had actually been one of them or not. And surely, in longer melodies at any rate, the question whether they do or do not end satisfactorily on another note than the tonic cannot depend on whether the hearer actually remembers having heard the tonic some bars back, or whether he only imagines it.

In the second place a somewhat similar criticism may be made on the way Prof. Meyer insists that there shall be only one note represented by 2—only one tonic, for a whole melody; when it

would have been perfectly consistent with the greater part of his theory to adopt a plan of representing modulations as is done in the Tonic Sol fa method. But though Prof. Meyer admits 'partial tonics,' he professes to reject 'modulations,' for reasons which are not at first apparent. One result of this, which Prof. Meyer seems to have overlooked, is that not only does it necessitate the use in a complex piece of music of very large numbers to represent the notes, but that we shall almost at once have to run beyond the numbers given in Prof. Meyer's complete scale. If, for example, a melody, in ordinary lanugage, modulates to the sub-dominant key, Prof. Meyer would say '21 becomes a partial tonic'. The sub-dominant of the new key would then be represented by 441, which contains the square of seven, and is not given in Prof. Meyer's scale.

These criticisms are not mere matters of detail or of notation. They have an important bearing on the most obvious point in which Prof. Meyer's theory differs from those ordinarily accepted, namely, his use of the number 7; the fact being that without this number his theory of the tonic as the Greatest Common Measure Note would break down, for without it there would be a gap in the present scale, between the fifth and seventh notes, unaccounted for. According to the ordinarily accepted view, as given by Helmholtz, for example, this gap is filled by a note a perfect fifth down from the tonic above; which note, however, could not be represented by a whole number if the tonic is to be represented by a pure power of 2. It follows, therefore, that the theory of the tonic as greatest common measure note involves that the note a fifth down from the tonic does not belong to the key—to make use of it necessarily implies a modulation. Prof. Meyer would go further and say that if you use it it *ipso facto* becomes *the* tonic, for he only admits of one tonic in a piece of music, even if it is as long as a whole opera!

There are some respects in which Prof. Meyer's paper is disappointing. In particular he throws no light on what to the psychologist is one of the most interesting problems presented by music, namely, the peculiar æsthetic effect of minor melodies. But it would go some way in this direction if his theory of the tonic could be established, as it would show a clear distinction between the major and any minor scale. And his paper has this great merit—it is not a mere dialectic, it brings the question to the test of experiment.

EDWARD T. DIXON.

VI.—NEW BOOKS.

The Study of Religion. By MORRIS JASTROW, junr., Ph.D., Professor in the University of Pennsylvania. London: W. Scott ("Contemporary Science Series"). Pp. xiv., 451. Price 6s.

THE "Contemporary Science Series" in which this volume appears has included some monographs of high class such as Weismann's *Germ-Plasm*, Ribot's *Psychology of the Emotions*, Lloyd Morgan's *Comparative Psychology*, and Starbuck's *Psychology of Religion*. This volume on the *Study of Religion* is something of a monograph itself; but on the whole I should regard it as of the handbook type: it professes to place in the student's hands an apparatus that will enable him to set to work upon the study of Religion in a scientific spirit and by scientific method. Prof. Morris Jastrow comes to his task well equipped in two ways; he is well acquainted with the literature of the subject over almost the whole field, and he has also the advantage of having made a special study in one particular area, the religion of Babylonia and Assyria. Besides this double training in method he has also passed through a discipline of the spirit, of the kind which is of more fundamental importance than even range of knowledge and mastery of method when so complex, so delicate, and so profound a subject as religion is in hand. The effect of these qualifications lies before us in a handbook which, in my opinion, merits unreserved commendation alike for the general conception, for the filling in, and for the temper of treatment throughout. As is proper in a handbook, the space is chiefly occupied in bringing together the various opinions expressed in the literature of the subject. We find a survey of these in the pre-scientific period, lucidly indicating the ways in which religion has been regarded by leading minds from the time of Plato to the period of Herder and Carlyle; then comes the formulation of the science in the later nineteenth century, and a fuller exposition of the views of the recent masters, Max Müller, Renan, Réville, Tiele—to name the leaders only. And all this is given in a setting of personal judgment; Dr. Jastrow is not merely the maker of a compendium: he has his own views, and the presentment is salted with them, throughout, and comes with the freshness of work shaped and coloured in the mind of the writer. He is himself, as he acknowledges, chiefly under the influence of Tiele—whose recent death students of this science respectfully lament—and there are many points in which I should be ready to join issue with Dr. Jastrow both as to what he receives from Tiele, and as to the turn he has given himself to these views. At the same time I would acknowledge that there is always a solid basis under Dr. Jastrow's positions, and he invariably expresses himself with considerateness for counter-positions.

The plan of the book gives, first, a general idea of what is understood by the Science of Religion. This is done at some length on account of

the recency of the recognition of Religion as the proper subject-matter of a Science; and a history of its gradual appearance on the scene is sketched. On classification various views are stated and criticised, after which Dr. Jastrow's own is given, his principle being the association of religion with life. I confess that it appears to me that this is to look for assistance in a region even more indefinite than the region which asks for assistance, and I feel that Dr. Jastrow has not relieved us from the necessity of choosing some classification for working purposes simply, with an acknowledgment that it is only an index-classification and that a scientific principle is yet to seek. As to *essence* and *origin*—which are discriminated sufficiently to require treatment in separate chapters—Dr. Jastrow, like Tiele, gives the impression of some confusedness between psychology and history, and I should not like to be called upon to say what they mean by essence as distinct from historical origination.

In part ii. are sketched the relations of Religion with Ethics, Philosophy, Mythology, Psychology, History, and Culture, in that order: the treatment naturally suggests criticisms at various points, but the student will find other positions than the writer's own indicated abundantly. Part iii. gives some 'practical aspects' of the study, including some account of its position in academic education, and an advocacy of the formation of Museums such as the Musée Guimet at Paris.

The Bibliography is a substantial feature of the book. Thirteen divisions are arranged, and a list of titles covering fifteen pages is given of works in French, German, Dutch and English. There are occasionally brief remarks critical or descriptive, *e.g.* on Ingram's *Outlines*, "one-sided from the Positivist's point of view," but these are so few as to suggest that Dr. Jastrow would do well to enlarge this bibliography by the supply of a note to each work. This would involve much labour possibly, but his reading has been so extensive that it would mean as little to him as to anybody, and its utility would be beyond question. There is a capital Index.

In putting so much historical work together with the fruit of independent research and reflexion into this unpretentious volume, Prof. Jastrow has rendered an important service to the universities and colleges which are introducing the study of Religion into their curriculum—the University of London and its colleges, for example. The general reader, too, will find that Dr. Jastrow writes a good English style, and the reading of this book should by no means be confined to academic circles.

A. CALDECOTT.

Comparative Physiology of the Brain and Comparative Psychology. By JACQUES LOEB, M.D., Professor of Physiology in the University of Chicago. London: John Murray. 1901.

Dr. Loeb has produced a work which can hardly fail to be of interest to physiologists and psychologists, if only for the energy with which certain rather hypothetical positions are defended, and certain other "metaphysical" conceptions, usually regarded as self-evident, are attacked. He will have nothing to do with soul-life in plants, or living cells, or spinal cords, or indeed anywhere else. *Consciousness* is a metaphysical (*i.e.* illusory) name for "phenomena which are determined by associative memory," and associative memory is, as it turns out, nothing really mental in the ordinary sense, but a physiological phenomenon,—an interplay between stimuli and the effects of past stimuli which were active simultaneously with or in close succession to the first in the

earlier experience of the animal. In its psychology, the book leaves very much to be desired, but as an analysis of *behaviour*, and for its suggestive theories as to the physiological basis of different types of behaviour, it contains much that is of value.

Substantially, the associative memory (*i.e.* what others would term 'intelligence') proves to be a function of the cerebral hemispheres, or some corresponding organ: its outward test is obedience to training, taming, learning by experience,—of which Dr. Loeb recognises only a single type,—and it is not found, in the organic world, below crustaceans and cephalopods. The restriction of this function to the central nervous system,—the hemispheres in vertebrates,—is proved by Schrader and Goltz' experiments on animals with the hemispheres excised; all inherited reactions, instinctive behaviours, remain unimpaired or even intensified, after the animal has recovered from the shock-effects: but its acquired reactions, its recognition of individual objects, and the like, are lost. The *reason* for this difference between the cerebral hemispheres and the rest of the nervous system is, however, by no means to be sought in any connexion of the former with a 'soul' or 'mind,' but only in its chemical constitution; and the chief problem for the comparative physiology of the future appears to be this—to determine those "peculiarities of the colloidal substances" on which the phenomena of associative memory depend. Dr. Loeb looks very far ahead!

The theory of the nervous system generally which is here supported is the *segmental;* the ganglia throughout are not centres, whether of co-ordination (as in the older theory of reflexes and instincts), or of association or spontaneous action (as in Flechsig's theory of the cortical centres), but merely conductors, by which the effects of a stimulus upon a peripheral organ are carried more quickly and more intensely to the corresponding muscles, than they would be carried through the protoplasm substance in its simpler form. In reflexes, the excision of the ganglion-cell usually renders reaction impossible, but the cause is that the ganglion-cell is the only bridge between the nerve-endings and muscles. Instincts are merely chain-reflexes, and require no further psychological explanation,—they are in fact accounted for by various tropisms, heliotropism, stereotropism, chemotropism, which, to a reader who has not Dr. Loeb's confidence in mechanical explanation, are terms very suggestive of "metaphysics".

The segmental theory is applied in an interesting way to the cerebrum; the use of the nerve-path and ganglia, in lower animals, and in the spinal cord of vertebrates, is to lower the threshold of stimulus, and to heighten the rapidity of conduction, so that animals supplied with nervous systems more readily adapt themselves to changes of stimuli than others: the same 'dynamic' conception holds of the cerebral cortex, in man for example: there are not separate cells in which memory-images are stored, which are lost or injured when certain types of memory lapse in mental disease: but everywhere in the hemispheres the same sort of processes may occur,—wherever the necessary chemical constituents are given:—only in certain pathological cases, the same process may require a much stronger stimulus than before, in the normal man: and those "innervations" are more likely and more easy to occur which are connected with, have taken part in, the greatest number of associations in the past. Many aphasic phenomena seem to be explained by these two 'dynamic' principles without requiring us to assume any definite centre of innervation which may be either destroyed or weakened. The cortex as a whole, like the lower ganglia, is only a conductor, of a special kind, for the transmission of nerve excitations.

J. L. M'Intyre.

Momenta of Life: Essays Ethical, Historical and Religious. By JAMES LINDSAY, D.D., etc. London: Eliot Stock, 1901. Pp. 146.

The very long list of titles and distinctions which follows Dr. Lindsay's name upon his title-page raises an expectation of learning and profound thought which the contents of this little volume do not justify. The principles at the base of the author's doctrine are those of Christian theism; excellent principles, but not much illustrated or advanced by what he has to say. We think, then, it is a pity that these papers have been published as philosophic essays. They would have been much better as sermons.

The paper entitled "Man and the Cosmos," perhaps the best in the book, a reply to naturalism on the one hand, and to Mr. Bradley's absolutism on the other, has all the eloquence and moral enthusiasm which make a good sermon. Only it is not an original contribution to thought.

La Philosophie russe Contemporaine. OSSIP LOURIE. Paris: F. Alcan, 1902. Pp. 278.

The author claims that his is the first book on Russian Philosophy. If we remember that Russian Philosophy filled only two pages in the four volumes of Ueberweg's *History of Philosophy* (8th ed. Berlin, 1897), and that Russian universities had no chairs of philosophy before 1863, a whole volume on this subject may be considered as a rare achievement. M. Lourié made his task easy by including in his book æsthetics, psychology and even sociology; he dedicates a whole chapter to such a fanatic as Pobiedonstsew and extends in a similar way his account of *Russian* philosophy to at least one *Polish* writer who will be astonished to serve as illustration of the growth of *Russian* thought. A lithographed circular added to the book informs us of the author's "solide érudition, rare originalité d'esprit, style clair et vif". As a sample of style may be quoted the author's attempt on pages 33-34 to define Soloview successively as "*contemplatif, théiste, panthéiste, moniste, dualiste, optimiste, pessimiste, mystique, rationaliste, idéaliste, spiritualiste*"! Soloview is said to be the most original philosopher in Russia (p. 9), but when the author comes to the question wherein Soloview's originality consisted, he sees it only in the "*manière d'exposer, de coordonner les idées*". He calls him a poet and a scholar (p. 28) and credits him with two chief aims of life which are alike outside of philosophy, poetry and scholarship, namely: (1) The union of the Churches; (2) the abolition of capital punishment. The reader remains in uncertainty who really Soloview was, and why his name belongs to the history of Russian philosophy. The few other philosophers dealt with specially by the author fare no better. We learn of Nicolas Grote, the late Professor of Philosophy at the University of Moscow, that he "erred ten years (1885-1895) in the metaphysic world" and and that he defined the soul as "le substratum de l'énergie psychique". Troitskij's best work is said to be his Logic, strangely appreciated in these words: "on y trouve des idées un peu embrumeuses, trop subtiles et par cela même originales" (p. 58). The fourth and last "philosopher" introduced to the reader, Preobrajenski, "found in the love of music the aim of his short life" (p. 65).

The impression produced by the author's account on an impartial reader is that there is no philosophy in Russia, despite more than a hundred writers quoted as having published books or articles in Russian on psychological, critical or sociological subjects. But the author seems

not to have exhausted his subject; otherwise he would not have omitted Aleksiej Aleksandrowicz Kozlow (1831-1901), whom he quotes only incidentally (p. 5) as having founded the first Russian philosophical journal in 1886. Kozlow deserved certainly a special chapter in an account of Russian philosophy, much more than Kropotkine, Herzen or Pobiedonstsew. Since the appearance in 1876 of his *Philosophic Studies*, and in 1877 of *Philosophy as a Science*, he published, besides a great number of articles in the Russian journal *Woprosy Filosofii* (vols. i., xv., xvi., xix., xxi., xxii., xxiv., xxix., xxx.), several volumes of critical investigations on Plato, Kant, Dühring, Hartmann, Tolstoi, and finally in *Swoje Slowo* (one's own word, five parts 1888-1898), an exposition of his philosophical convictions which he calls panpsychism. Kozlow had been Professor of Philosophy at the University of Kiew, and he was first influenced by Schopenhauer, later by Teichmüller. His panpsychism is an individualistic view of the universe, as consisting of a plurality of substances, all similar to human souls, not created, but ruled by one Highest Being, and ruling inferior monads forming bodies of a different degree of organisation in successive incarnations. Born in Moscow Kozlow died in St. Petersburg, and spent his life in different parts of the Russian Empire, with the exception of a short sojourn in Paris in 1876. He wrote all his works in Russian, and the German influence on his thoughts did not deprive him of a certain originality. Entirely free alike from a religious bias like Soloview, and from positivistic prejudice like Grote or Troitsky, Kozlow was perhaps the only pure metaphysician among Russians.[1] He was not very enthusiastic about the Russian nation, which he knew well and considered to labour under an ineradicable servilism; he thought that the Russian *moujik* always either puts himself into the hands of some Razuvajew (the type of a village usurer), becoming his slave, or, if he can, keeps others in a similar servitude. Such views made Kozlow not very popular in Russia, but nobody who reads his works can deny his genuine philosophical faculty of thought and of clear exposition. The omission of his theories in the "first book on Russian philosophy" is unaccountable.

Der Hermeneutische Syllogismus in der Talmudischen Litteratur. Ein Beitrag zur Geschichte der Logik im Morgenlande. By Prof. ADOLF SCHWARZ. Karlsruhe, 1901.

This treatise consists of an elaborate analysis of one of the arguments used by the Rabbis in applying the rules contained in the Pentateuch to cases neglected by the legislator. The author writes as an orthodox Israelite for the benefit of his co-religionists, and is without doubt well qualified to expound the Talmud. His book will be of great help to those who desire to understand the subtleties of that work, but they will have to possess considerable preliminary knowledge of the subject if they are to follow him. His purpose moreover is not so much to assist beginners as to uproot an error nearly 2,000 years old, and authorised by hundreds upon hundreds of the most enlightened men'. This can only be done by 'laying bare the roots of the error, digging it out and then ploughing over the soil whence it sprang'. What is this serious error, and how does the uprooting of it affect the readers of MIND?

The argument which is discussed in this book is called by the Rabbis

[1] On Kozlow, see his obituary in vol. lviii. of *Woprosy Filosofii*, pp. 183-206, and § 69 in the 8th ed. of Ueberweg-Heinz's *Grundriss der Geschichte der Philosophie*. Berlin, 1897.

'light and heavy,' and resembles the argument *a multo fortiori* or *a minore ad majus*, which (says Coke upon Littleton) is an argument frequent in our author and our books. In collections of legal maxims it appears in the form *omne majus continet quod est minus*. We cannot however quite identify the two arguments, and Dr. Schwarz has probably done right in using the Rabbinic term throughout. A typical example of the reasoning of the Rabbis is the following: 'Animals that are defective are fit for food, but unfit for sacrifice. Animals of the sort called *Trefah* are unfit for food. Clearly then *Trefah* animals are also unfit for sacrifice.' This really involves a principle that whatever is fit for sacrifice is fit for food; and, as the Rabbis say, is refuted by 'fat and blood,' both of which are fit for sacrifice, but not fit for food. Apparently, however, the Rabbis think less of principles involved than of things being heavy and light, in the sense of the strictness or laxity with which the Law regards them. They think therefore the argument can be refuted either by adding weight in the first proposition (*e.g.*, showing that the defective animal was in some respects more strictly treated than the *Trefah*), or reducing it in the second (*i.e.*, showing, as above, that sacrifice was in some ways more laxly treated than food). The refutation in any case consists in annulling the proportion which appears to exist.

The error which this book is to refute is the supposition that the essence of the argument lies in a proportion between two things. In the author's opinion the 'light and heavy' is a syllogism in which the general in extent is inferred from the particular. His explanation of the Rabbinic reasoning, in stating the argument, refuting it, and amplifying it, is so lucid that it is probably perilous to disagree with him about his main contention: yet it seems surprising. Even in the case quoted the inference is from defective animals to *Trefah*, neither of which can well be called general in extent if the other is particular. And indeed, though considerable space is devoted to the matter towards the end of the volume it seems doubtful whether the writer has convinced himself. Hillel argued 'The daily sacrifice, which is not sanctioned by a penalty, supersedes the Sabbath; still more must the Passover sacrifice, which is sanctioned by a severe penalty, supersede the Sabbath'. The mathematical formula which the author gives for this proposition is as follows: If b is a specimen of A, and A the species of B, then b is a specimen of the genus B. I assert then that if A have the specific characteristic a, it is B. With neither of these formulæ can any fault be found; the difficulty is to assign the values: and it is at least inelegant that different values are given the letters in the two formulæ, though they are printed contiguously. In the first A means all that is superseded by the daily sacrifice, B all that is superseded by the Passover sacrifice; b means the Sabbath. In the second A means the daily sacrifice, and a the characteristic of not having a sanction, whereas B (the Passover sacrifice) has a sanction. Working out an equation of this kind is as hard as playing croquet in Wonderland.

What however has caused this book to be sent for review to MIND is the endeavour which the author makes to show that the Rabbinic argument is an improvement on the Aristotelian syllogism. The writer is familiar with Mill's criticism on the latter, and he thinks the Rabbis invented an instrument which got over those objections. 'To Jewish thought every argument is a "light and heavy,"' and this was because owing to the rapid working of their brains the Aristotelian syllogism was too slow for them. 'If Hillel's argument were put into Aristotelian syllogism, it would run thus—"All laws that are superseded by the daily sacrifice are also superseded by the Passover sacrifice: the law of the

Sabbath is superseded by the daily sacrifice: therefore it is superseded by the Passover sacrifice". Hillel's syllogism omits the major premiss, and gives a reason for it instead.'

If Hillel's syllogism does so, it may be better than Aristotle's in that it is equivalent to two syllogisms, but in no other way. It certainly involves certain principles: *viz.*, that a sacrifice must supersede the Sabbath on the ground of superior holiness, and that a sacrifice sanctioned by a penalty must be more holy than one not so sanctioned. The major premiss would however be 'all sacrifices that reach a standard of holiness x supersede the Sabbath'. One might find as much fault with Hillel's figure for not giving the reason for these two principles as with Aristotle's for not giving the ground for the major premiss. Clearly the figures compared by Dr. Schwarz belong to different classes, and do not admit of comparison.

I regret that the nature of this journal prevents my calling attention in detail to the very valuable matter which this book contains, and to the care with which the writer has followed the discussions of the Rabbis. His investigations of the terminology of different periods will give great help to those who would introduce chronological order into the chaos of Rabbinic literature. And the reverence with which he speaks of eminent men of his own persuasion will excite sympathy outside his community.

Grundzüge der Psychologie. Von HERMANN EBBINGHAUS. Zweiterhalbband. Liepzig: Veit & Co., 1902.

In this second half of the first volume. Prof. Ebbinghaus completes his account of the Sensations and their specific peculiarities by dealing with the sensations from the skin and those of movement and position and of the lower senses, including under this last heading, smell, taste and the organic sensations; and among the last again he includes pain sensations, other than those from the skin, sensations of hunger and thirst and of their satisfaction, of discomfort, of disgust, of fatigue and its contrary, of strength, etc. Then follows an account of the general properties of sensation, or, more properly, of perception, and here Ebbinghaus uses 'Empfindung' and 'Anschauung' as alternative terms. Space-perception in general is followed by the space-perception of the skin, of the single and of the double eye. Then come perception of time, of movement and change, of similarity and difference, of unity and multiplicity, and an excellent discussion of the general relations between stimulus and sensation. This third book on the simplest psychical constituents is completed by a chapter on 'Vorstellungen' (ideas in the usual English sense of the word) and one on feelings. The fourth book, 'The Most General Laws of the Mental Life,' deals in four chapters: (1) with the co-existence of mental states—in this section the problems of attention are discussed: (2) with their succession and the laws of association and memory; (3) with practice, use, dispositions and fatigue; (4) with the relations of psychical states to movements of the parts of the body. As the book can be more advantageously discussed when completed by the appearance of two more half-volumes, it need only be said that this second half-volume fully maintains the very high standard of the first. The treatment is for the most part very thorough, the discussions are clearly and impartially presented. The book has the great merit of taking full account of all recent experimental work in psychology and of allowing due weight to physiological considerations, while remaining essentially a work on general psychology in which historical treat-

ment is not neglected. It should thus go far towards healing the gap that unfortunately has arisen between the older and the newer methods of treatment. It bids fair to rank as the best general text-book for all classes of students, beginners not excepted. For, as Prof. Ebbinghaus truly says, "even on first approaching psychology one can arrive at the right way of regarding it only by making a study of considerable range. For it is of the first importance, that from the outset one should be filled with a lively sense of the astonishing richness and complexity of the life of the mind."

W. McD.

Friedrich Ueberwegs Grundriss der Geschichte der Philosophie des neunzehnten Jahrhunderts. Neunte Auflage. Herausgegeben von Dr. M. HEINZE. Berlin: Mittler und Sohn, 1902. Pp. viii., 625.

This is the fourth and last part of Ueberweg's famous work, brought up to date and published separately. Since the last edition which appeared in 1897 there have been various new developments which are duly recorded, the additional matter amounting to about 100 pages. A noteworthy feature of the work is the summaries of the progress of thought in the various countries by native experts. The English section by Dr. Dawes Hicks is carefully and fully done upon the whole. The work altogether is invaluable for reference.

Ad Spinozae Opera Posthuma. Scripsit Dr. J. H. LEOPOLD. Hagae Comitis: apud Martinum Nijhoff, MCMII.

Dr. Leopold begins by investigating Spinoza's Latinity. He shows that Spinoza's Latin betrays an intimate knowledge of the language. There are quotations from Cicero, Virgil, Horace and Ovid, and constant echoes of Terence, whose influence (as Dr. Leopold thinks) reveals itself in some of the Emotions and Typical Characters as portrayed in the third and fourth parts of the Ethics. On the whole, Spinoza's style may be said to attain the high level of scholarship which distinguishes the educated men of his time (pp. 1-37). Next (pp. 38-64), Dr. Leopold shows that the *Editio Princeps* of the *Opera Posthuma* is not always to be trusted, that the text must often be reconstituted by conjectural emendation, and that for this purpose the Dutch Version is of unique value. This *Versio Belgica* (*cf. Van Vloten and Land*, vol. i., p. vii.) appeared in the same year as the *Editio Princeps*, and seems to have been translated direct from Spinoza's manuscript. Dr. Leopold has, I think, proved beyond question that this Dutch Version, though far from infallible, deserves to be most carefully collated with the *Editio Princeps*. Lastly, the Appendix (pp. 65-92) emends various passages in the *Tractatus de Intellectus Emendatione*, the *Ethics*, the *Tractatus Politicus* and the *Letters*. [On p. 87, l. 14 read "Ep. XLII." for the misprint "*ibid.*"].

Students of Spinoza will be grateful for this minute, careful, and scholarly pamphlet, which throws light on many obscurities of detail. But its chief value is for the future editor of Spinoza. Let us hope that Dr. Leopold himself will one day give us a text reconstituted on the principles which he has so ably advocated.

H. H. JOACHIM.

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J. W. Riley, *The Founder of Mormonism*, New York, Dodd, Mead & Co., 1902, pp. xix., 446.

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VII.—PHILOSOPHICAL PERIODICALS.

PHILOSOPHICAL REVIEW. Vol. xi., No. 2. **J. Dewey.** 'The Evolutionary Method as Applied to Morality.—I. Its Scientific Necessity.' [(1) The object of science is primarily to give intellectual control (ability to interpret phenomena), and, secondarily, practical control (ability to secure desirable experiences). (2) In physical science this end is accomplished by experiment, which takes an unanalysed total fact that in its totality must simply be accepted at its face value, and shows the exact and exclusive conditions of its origin. It takes the fact from its opaque isolation and gives it meaning by presenting it as a distinct and yet related part of a larger historical continuum. (3) The discovery of the process becomes an instrument for the interpretation of other facts, which are explicable by reference to the process operating under somewhat different conditions. (4) The significance of conscious or spiritual values cannot be made out by direct inspection, or by direct physical dissection and recomposition. They are, therefore, outside the scope of science, except so far as amenable to historical method. (5) History gives us these facts in process of becoming or generation: the simpler, earlier terms are the counterpart of isolation in experiment, the successive later terms represent synthetic recombination under increasingly complex conditions. (6) A complete historical account of an ethical idea or practice (*a*) enables us to interpret its cruder and maturer forms, and (*b*) shows us the operations and conditions that make for morality, thus furnishing intellectual tools for further ethical work. (7) By analogy the successful execution of this mode of approach would yield us practical control.] **W. M. Urban.** 'The Relation of the Individual to the Social Value Series.'—I. [There are two conceptions of value in the history of philosophy. (1) The ethical consciousness, having determined its value, identifies the real with these (Plato's ethical idealism). "The principle of equivalence of values in the subjective consciousness can be seen working itself out in the objective world order in an eternal principle of justice," and "the principle of infinite increase of value . . . manifests itself equally in the objective social order". This view "ignores the mutations of value due to causal and economic laws". (2) Values are thought to flow out of the metaphysical determination of the real (Spinoza). Value is part of the system of nature, and, therefore, cannot be conceived as permanent or absolute. So we are led to the view either that the postulates of the individual consciousness are, from the larger point of view of the natural system, illusory (Ehrenfels), or that "inner valuation occupies the unique position of getting its content out of reality, but at the same time of for ever negating the real in favour of new values which in turn determine reality itself" (Simmel). May there not be a third view: (3) that the irreversible individual series of the self and the reversible serial order of social valuation are "in some sense mutually indifferent"? It is shown, by consideration of the work of Guyau, Nietzsche, Sidgwick, that "this concept of the indifference of ethical values to nature . . . resolves itself into the hypothesis of a relative indifference of two aspects of the fundamental principle of rational suffi-

ciency". It is not probable that there is an ultimate dualism in reason; but as a methodological principle the hypothesis of relative independence may be fruitful.] **S. S. Colvin.** 'The Common-Sense View of Reality.' [The paper falls into four parts. (1) A sketch of the growth of the common-sense view of reality in the child and the race. "It is the determination of the external world from the practical standpoint, from the standpoint of interest, that may be defined as the common-sense view of reality." (2) Outline of the epistemological problem in the history of philosophy, from the earliest Oriental speculations to Kant. (3) The attacks of epistemology upon common-sense are found wanting, both in the form of empirical argument (based on the relativity of sense-perception, on certain phenomena derived from physical science, on the character and arrangement of the nervous system) and in that of *a priori* statement. Kant's epistemology breaks down "because he is obliged to pass from pure subjectivity to objectivity, and does this by the use of the causal law, a transcendental principle". (4) Construction. All knowledge is knowing things in relation. The relation is the causal relation, Leibniz' law of sufficient reason. From this point of view "the difficulties involved in the common-sense view of the world disappear to a great extent"; "reality is in proportion to its power to enter into relation, and real knowledge is knowledge of such relation".] **A. R. Hill.** 'Proceedings of the Second Annual Meeting of the Western Philosophical Association, held at Chicago, 31st December, 1901, 1st January, 1902.' Reviews of Books. Summaries of Articles. Notices of New Books. Notes.

Psychological Review. Vol. ix., No. 2. **J. Royce.** 'Recent Logical Inquiries and Their Psychological Bearings.' [This is the President's Address before the Chicago meeting of the American Psychological Association, January, 1902. The author calls attention to two classes of investigations: those "directly bearing upon the psychology of the thinking process, and upon the natural history of logical phenomena in general," and "studies in the comparative logic of the various sciences, and examinations of the first principles of certain special sciences". The literature of this second type will presently grow into a new science, a "comparative morphology of concepts". (1) The psychology of the intellect is one of the oldest parts of psychology; but modern psychology halts at the treatment of conception, judgment and reasoning. Logic, in the meantime, has sought a basis in psychology: witness the influence of Brentano's doctrine of the process of judgment. The result is, that the logic of the judgment is chaos. Two paths are open: to cleave to logic and reject psychology (Husserl), or to shape the psychological problems for experimental handling (Ribot, Marbe). But the first can hardly be consistently followed; and the second has proved to be a *cul-de-sac:* what Ribot and Marbe studied "was not, in most cases, any process by which a thought can come to be built up in our consciousness at all". Let us then turn to the "larger expressions of the intellect themselves". To language, with Erdmann or Wundt? No: the relation of language to the thinking process has been overemphasised. (2) We turn rather to the logic of science. In the mathematical field we find awaiting us the problem of our ordinal concepts, of our consciousness of ordered series of objects. "Psychological space theories must be brought into explicit relation with mathematical theories." In other fields, we find a view of thought as "a variable and progressive process that is concerned with the adjustment of conduct to experience": the work of Mach, Pearson, Hertz offers to psychology the definite problem of an analysis of the thinking process. Finally, we discover everywhere

in this new literature an unexampled prominence given to exactly defined classifications. But classification depends upon inhibitions, and upon becoming conscious of our inhibitions; it raises the problem of the yes-no conciousness in definite form. The problem of our inhibitory consciousness is, then, with that other problem of ordinal concepts, the task assigned to psychology by recent logical inquiry.] **L. Farrand.** 'Proceedings of the Tenth Annual Meeting of the American Psychological Association, University of Chicago, Ill., December 31, 1901, January 1, 1902.' **G. S. Fullerton.** 'The Insufficiency of Materialism.' [Democritus recognised the existence of sensation and reason, but failed to find for them a place in his scheme of existence. The 'secretionist' gives them a place in his system, but they cannot take that place without ceasing to be what they are. Even those who speak of mental process as 'function' or 'activity' of brain are in bad case: for either they identify such process with atomic motion, and talk nonsense; or they make it distinct from motion, and so offer a merely verbal explanation; or they go beyond mechanism, and suggest 'inside and outside,' 'double-faced entity,' or what not. Colours and sounds exist, by evidence of common sense and the accepted usages of speech; the mechanistic view has no room for them. If we knew more? Granted that we may, we still have to explain that the imperfectly known natural world can be pieced out, with a good deal of accuracy, by such things as sensations. In a word, we must admit "that something exists save matter and motion; and a doctrine that makes this admission has advanced beyond the standpoint of pure materialism". So the task awaits the metaphysician.] Discussion and Reports. **A. H. Lloyd.** 'Professor Fullerton on "The Doctrine of Space and Time".' [Fullerton's treatment wrenches this doctrine from its systematic setting, and also shows ignorance of current mathematical theory, more especially of the modern conception of infinity.] **G. V. N. Dearborn.** 'On the "Fatigue" of Nerve Centres.' [Criticism of Woodworth's contention that the nerve centres in cord and brain are "exceedingly resistant to fatigue". Woodworth (1) confuses 'fatigue' with 'exhaustion,' and (2) relies wholly on physiological arguments, to the exclusion of psychophysical.] **H. F. Osborn.** 'Rapid Memorising: "Winging a Part" as a Lost Faculty.' [Letter of H. Edwards, regarding 'cramming' for the stage.] **J. M. Baldwin.** 'A Correction' [of a quotation from Small]. Psychological Literature. New Books. Notes.

American Journal of Psychology. Vol. xii., No. 4. **G. M. Whipple.** 'An Analytic Study of the Memory Image and the Process of Judgment in the Discrimination of Clangs and Tones.' [First part of what promises to be a very valuable study. (1) Introduction: relation of the problem to Bentley's work on the visual memory image; criticism of Wolfe, Kennedy, Angell and Harwood. (2) Experiments: repetition of one of Wolfe's series of 1886, with the different purpose of tracing introspectively the course and nature of the tonal memory image and of analysing the process of judgment. (*a*) The tonometer clang arouses a wide-spread reaction: adjustment of ear, affective tone, vivid and detailed associations, organic sets. These supplements individualise the auditory image; they vary with the type of the observer. (*b*) At the cessation of stimulus there is no image. This swells out, clearly, after a pause: it has the timbre and localisation of the instrument, and usually lacks the associates just mentioned. (*c*) Left by itself, the image wanes. The observer seeks to reinforce it, by visual memory, humming, muscular adjustments characteristic of active attention, emphasis on respiration, etc. But attention must wane, and with attention the image. It

suffers most in intensity, less in clearness, least in quality. There are individual differences. (*d*) As a rule, the image is of little aid to discrimination after 30 sec., and may be altogether gone at 60 sec. The supplementary features have not necessarily disappeared, and may now come to the focus of attention. (*e*) When the stimulus of comparison sounds, it is immediately known to be 'equal,' 'high' or 'low,' whether there be an image in consciousness or not. (*f*) If the image is present, and the new stimulus identical with the old, the experience is wholly auditory. Even if the image have disappeared, the experience may 'feel' largely auditory. (*g*) If the new stimulus is different, the experience is less auditory; the attention is taken by the complex of strain sensations, with remoter visual and organic elements, that stands for 'high' and 'low' in the case of the given observer. (*h*) Sometimes there is a 'feeling of difference,' which is not specifically 'up' or 'down'. (*i*) If the new stimulus is neither familiar nor definitely different, the observer has recourse to auditory comparison: judgment is uncertain and often wrong. (*j*) Pleasantness goes with subjective certainty of judgment, not with any objective category. (*k*) The verbal formulation comes later than the decision. (*l*) Immediate judgments are correct and certain. (3) Further experiments: effect of practice on methods of judgment; comparison of bottle tones with tonometer clangs; introspection for tones with long intervals; experiments with distraction.] **M. F. Libbey.** 'Influence of the Idea of Æsthetic Proportion on the Ethics of Shaftesbury.' [Proportion, symmetry, and related æsthetic concepts are, in Shaftesbury's view, applicable to moral phenomena. These concepts, indeed, are native to the structure of the mind, and constitute our moral sense. Virtue consists in preserving a due proportion in the affections; it produces harmony and happiness. The identification of selfish and social interests may occur on any of the planes of culture between animal and spiritual life. The highest good is harmony on the highest plane of culture, consists in pure enjoyment of the beauty of all nature, and demands stoical perfection. The highest beauty is at once beautiful and sublime. Evil may be seen to be imaginary by the retreat of consciousness to the place of an æsthetic bystander. Enthusiasm is genius or fanaticism, according to its proportions. 'Natural' means symmetrical to egoism and altruism, on whatever level of culture; common sense is nature on a middle level. Literature demands self-knowledge through observation and sympathy. The beauty of art depends on a harmonious equilibrium of contradictory moral elements. The striking defect in Shaftesbury is lack of recognition of evolutionary activities (tragic earnestness, fanaticism, self-sacrifice) which mar harmony on one level, to lead to it on a higher; he understood adequate but not provisional forms.] **C. R. Squire.** 'A Genetic Study of Rhythm.' [An experimental study of the rhythms of speech. The author concludes that rhythm is perceptual in its nature. Affective elements may be (and generally are) present, but cannot be considered its essential constituents. Qualitative variations, unlike intensive and temporal, are not constant in direction. The seeming regularity with which the accented tone in a motor rhythm is raised in pitch has a purely physical basis. In an auditory rhythm either the high or the low tone may be accented. Quality, therefore, cannot be considered as an independent variant in rhythm, but only as a substitute for (or intensification of) the intensive factor. The various rhythmical forms are not equally simple psychologically. They may be arranged in an order of increasing difficulty for the producing or perceiving subject, as follows: (1) a regular succession of equal intervals separated by equal pauses; (2) the same, with the introduction of an irregular accent

(a stage characteristic of children's verse); (3) the spondee, if we may use metrical terminology; (4) the trochee; (5) the iambus; (6) the dactyl; (7) the anapaest; and (8), most difficult, the amphibrach. These different forms may arise through temporal, intensive and qualitative changes. A motor rhythm can never be said to be in stable equilibrium. A simple rhythm may gradually become more complex, and a complex rhythm may break down and revert to a simpler type. Then inversions in the typical temporal, intensive and qualitative arrangements occur.] **E. C. Sanford.** 'Improvements in the Vernier Chronoscope.' **E. B. Titchener.** 'Fluctuation of the Attention to Musical Tones.' [Physically pure tones, of minimal intensity, do not fluctuate.] Psychological Literature. Book Notes.

International Journal of Ethics. Vol. xii., No. 3. **A. W. Benn.** 'The Ethical Value of Hellenism.' [A very able defence of the position that the Greeks were as great in the theory and practice of morals as in art and science.] **G. W. Knox.** 'Religion and Ethics.' [Ethics is rational only on the assumption of a transphenomenal reality. Religion is the intuitive recognition of this reality. Religion is only worthy so far as it is ethical. It becomes corrupted by identification with other feelings and passions.] **F. M. Stawell.** 'The Conception of Nature in the Poems of Meredith.' [He regards nature as akin to what is best in man, so that communion with nature gives us moral strength. To effect this communion man needs faith.] **J. A. Ryan.** 'The Ethics of Speculation.' [Speculative operations in stock and produce are of doubtful economic utility, cause great social evils and are vitiated by many dishonest practices.] **J. H. Harley.** 'The Place of Ethics in the Table of the Sciences.' [A criticism of De Greef's Table of the Sciences. Ethics is not one of the social sciences; every science has an ethical side. The cosmic process is not entirely unethical; it is ethical after its own kind. The unifying principle of the universe is something wider than ethics.] **W. M. Salter.** 'America's Duty in the Philippines.' [A plea for granting self-government to the Filipinos.] Book Reviews.

Revue Philosophique. May, 1902. **Fr. Paulhan.** 'La Simulation dans le Caractère.'—II. [An interesting study of "simulated sensibility" and the part it plays in intercourse, auto-suggestion and religion.] **André Lalande.** 'Sur l'Apparence Objective de l'Espace Visuel.' [Vision gives us our idea of "external reality," for it is that sense *par excellence* affords perceptions which we share with others.] **Dr. Janklovitch.** 'Nature et Société.' [The natural world is governed by the law of causality; the human by ends and values. This domain of *immanent teleology* is the field of sociology.] **E. d'Eichthal.** 'La Psychologie Economique' (Revue Critique). Analyses et comptes rendus. Revue des Périodiques. June, 1902. **Ch. Dunan.** 'La perception des corps' (II.). [All localisation of perceptions implies a *transcendental consciousness* of universal space, for it is only by reference to the universe as a whole that we determine the place occupied by any particular object. This intuition of the absolute is non-temporal, hence never appears in empirical consciousness but it imposes upon the latter the *a priori* forms which have been called 'local signs'.] **Th. Ribot.** 'L'Imagination créatrice affective.' [There exists a form of creative imagination which works entirely with *affective states*. It is seen in its most complete form in musical creation.] **De Wulf.** 'La Notion de philosophie scolastique.' [An historical study.] Analyses et comptes rendus. Revue des périodiques étrangers (*Philosophical Review*).

Zeitschrift für Psychologie und Physiologie der Sinnesorgane. Bd. xxviii., Heft 1. **W. Frankl.** 'Zur "generellen Urteilstendenz" bei

Gewichtsversuchen.' [Report of a series of practice-experiments with lifted weights, made in the Graz laboratory, which show clearly the law of 'general tendency of judgment' laid down by Martin and Müller. The law declares "that in comparisons of a constant normal weight with a varying weight of comparison, the chances for a correct judgment are greater, other things equal, when the weight of comparison is the second to be lifted".] **H. Frey.** 'Experimentelle Studien über die Schalleitung im Schädel.' [A careful study of tonal conduction in bone tissue, beginning with preliminary experiments on the femur, fresh and macerated. We give the results for the skull. (1) The direction followed by sound waves within the bony portion of the head depends essentially upon the distribution of the bone substance as regards density. (2) When, therefore, sound waves proceed from the auditory organ of the one side, they spread out within the skull at large, but are conducted predominantly towards the symmetrical points of the other half of the skull, *i.e.*, to the opposite pyramid. (3) Sound can, then, be transmitted from ear to ear by means of bone conduction. The transmission is accomplished by the bony skull itself, without essential aid from the chain of ossicles. (4) These results are obtained from the macerated skull, and from the fresh skull with the soft parts unremoved. They may therefore be predicated also of the living head. It is probable that bone conduction sufficiently explains the phenomena of diotic beats, which have been much in discussion.] **G. M. Stratton.** 'Der linear-perspectivische Factor in der Erscheinung des Himmelsgewölbes.' [Maintains, against von Zehender, that the curvature of the clouded sky is a phenomenon of linear perspective, akin to the concavity of the earth's surface when seen from a great height.] Literaturbericht.

PHILOSOPHISCHE STUDIEN. Bd. xviii., Heft 1. **P. Zoneff** und **E. Meumann.** 'Ueber Begleiterscheinungen psychischer Vorgänge in Athem und Puls.'—I. [This is the first of a series of investigations into the physical concomitants of "psychische Erregungszustände," *i.e.*, feeling, emotion, mood and attention. The authors put forward the two claims of absolute impartiality as regards theory and of improved technique. The main point of the inquiry is the correlation of breathing (abdominal and thoracic) with mental state and process; but curves of pulse and heart-beat were also taken. (1) The paper opens with an account of apparatus, method of experimenting and calculating results, etc., and with a brief survey of previous work. Then follow (2) experiments on the expression of attention in breathing and pulse. The attention was directed upon visual, auditory and tactual stimuli, and upon 'ideas' (arithmetical problems, etc.). Result: "a voluntary concentration of the attention effects a retardation of pulse and an inhibition of breathing, more marked in thoracic than in abdominal breathing". The inhibition may be shown in arrest of breathing, or in a flattening of the curve, often accompanied by quickened respiration. Fluctuations of attention are accompanied by exactly corresponding fluctuations in the changes of pulse and breathing. (3) Experiments upon pleasantness and unpleasantness: visual, auditory and tactual stimuli, and reproduced ideas. "All pleasant feelings effect a flattening and quickening of breathing together with a retardation of pulse; all unpleasant feelings are attended by a deepening and slowing of breathing and an acceleration of pulse." (4) Experiments on the relation of attention to the feelings. "All the effects of feeling upon pulse and breathing are abrogated by a real distraction of the attention by means of another stimulus." "A simple directing of the attention upon the feeling strengthens this feeling; but if the feeling is made the object of a psychological analysis and in this

sense becomes the object of attention, it is very considerably weakened or even destroyed." This distinction, as Meumann remarks, is systematically important. "The unpleasantness caused by mental fatigue exerts the same effects upon breathing and pulse as does the simply sensuous feeling of unpleasantness," and recovery has the same manifestations as sense pleasure.] **A. Kirschmann.** 'Zum Problem der Grundlagen der Tiefenwahrnehmung.' [Reply to R. Müller. The author maintains that in monocular vision parallactic relations obtain, based upon the distance between the centres of the sighting lines and lines of regard, which play an essential part in the monocular perception of depth. The effect is greatest in the lateral regions of the lower half of the field of vision, and for objects within easy reach of the observer. Müller's experimental tests do not meet these conditions. Moreover (1) there is no reason why "the data for localisation in the third dimension should be directly accessible to attention and to quantitative estimation": witness the many 'automatic' activities of daily life. (2) The author's indirect proofs (slit-pupil of cat, artificial production of metallic lustre, etc.) must be met, if his theory is to be disproved. (3) The parallactic effect is not so small as to be negligible. As an argument from analogy, the author describes certain binocular experiments in which a hardly perceptible chromatic aberration (in a glass lens, not in the eye itself) gives rise to marked distance-effects.] **M. Brahn.** 'Experimentelle Beiträge zur Gefühlslehre.—1. Theil. Die Richtungen des Gefühls.' [The paper opens with a short sketch of the conditions under which Wundt set up his recent theory of the threefold direction of the course of feeling. The writer stresses the importance of the theory for pathology, and the verification obtained by Vogt in the state of 'eingeengtes Bewusstsein'. He then discusses 'psychological methods' of investigation: a large number of stimuli is laid before the observer, and the affective reaction noted; then stimuli which gave the same reaction are directly compared (method of comparison), or stimuli which gave opposed reactions are presented together (method of compensation). Next comes a section on the diagnostic value of expressive movements. They have a direct psychological value as affective stimuli, all the more since their affective tone may be regarded as constant. The James-Lange theory has overshot the mark, though it has done good service in calling the attention of psychologists to organic changes. The experimental part of the article is concerned with the vasomotor (pulse) expression of the directions of feeling. After a criticism of apparatus and of previous work, the author presents his own experiments. Their results are as follows: (1) Subliminal stimuli may produce a change (a slight lengthening) of the pulse. (2) Under the influence of the most diverse forms of stimulation, three and only three kinds of paired pulse changes can be demonstrated. These changes correspond exactly to the three forms of feeling. (3) Pleasantness corresponds to lengthening and heightening, unpleasantness to shortening and lowering of the pulse curve; excitement corresponds to heightening, tranquillisation to lowering; tension corresponds to shortening, relaxation to lengthening (the latter are accompanied further by opposite dicrotic changes). (4) First in the order of time appear the effects of excitement-tranquillisation, then those of pleasantness-unpleasantness, last those of tension-relaxation. (5) In many cases the strength of the pulse changes corresponds to the intensity of the attendant feeling. (6) The phenomena of the feeling of tension evince a periodic intensive oscillation, corresponding to the oscillations of attention.]

VIII.—NOTES.

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OF

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DR. G. F. STOUT,

WITH THE CO-OPERATION OF DR. E. CAIRD, PROFESSOR WARD, PROFESSOR PRINGLE-PATTISON, PROFESSOR E. B. TITCHENER, AND OTHER MEMBERS OF AN ADVISORY COMMITTEE.

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